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HISTORY

OF THE

INDIAN ARCHIPELAGO.

HISTORY

OF THE

INDIAN ARCHIPELAGO.

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Printed by George Ramsay & Co.

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Plate 1.

Drawn by Capt.n George

Engraved by W.H. Lizars

VIEW NEAR BUITENZORG OR BOGOR IN JAVA.

Edinburgh, Published by Constable & C.o 1820.

HISTORY

OF THE

INDIAN ARCHIPELAGO.

CONTAINING AN ACCOUNT

OF THE

MANNERS, ARTS, LANGUAGES, RELIGIONS, INSTITUTIONS,

AND COMMERCE OF ITS INHABITANTS.

BY

JOHN CRAWFURD, F. R. S.

LATE BRITISH RESIDENT AT THE COURT OF

THE SULTAN OF JAVA.

WITH MAPS AND ENGRAVINGS.

IN THREE VOLUMES.

VOL. I.

EDINBURGH:

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ADVERTISEMENT.

THE materials of the following work were collected by the writer, during a residence of nine years in the countries of which it professes to give an account. In the year 1808, he was nominated to the Medical Staff of Prince of Wales' Island, and, during a stay of three years at that station, acquired such a knowledge of the language and manners of the native tribes, as induced his distinguished patron, the late Earl of MINTO, to employ him on the public service, in the expedition which conquered Java in 1811. During a residence in ~~that island~~ Java of nearly six years, he had the honour to fill some of the principal civil and political offices of the local government, and thus enjoyed opportunities of acquiring information regarding the country and its inhabitants,

which no British subject is again likely, for a long time, to possess. A political mission to Bali and Celebes, and much intercourse with the tribes and nations frequenting Java for commercial purposes, make up the amount of his personal experience.

The sketches of Antiquities were executed chiefly by a Native of Java, and they have at least the merit of being drawn with minute fidelity. The Map was compiled and engraved, with great care, by Mr JOHN WALKER of the Admiralty, and the Author hopes he does no more than justice to that gentleman, when he says, that it is the completest yet submitted to the public. In the Appendix to the Third Volume a brief explanation is given of the nature of the materials from which it has been drawn.

EDINBURGH, *March* 1820.

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INTRODUCTION.

THAT great region of the globe, which European geographers have distinguished by the name of the *Indian Archipelago*, became well known to the more civilized portion of mankind, and was first frequented by them much about the same time that they discovered and knew America. From time almost immemorial, Europe had, indeed, been supplied, in the course of a circuitous and intricate commerce, with some of its rarest productions, but the very name of the country of those productions was unknown; and, in regard to all knowledge not merely speculative or curious, our discovery of the Indian Archipelago is a transaction of history as recent as that of America. The Indian Archipelago, at the moment of the discovery of both, may be advantageously compared even with the New World itself, to which, in fact, its moral and physical state bore a closer resemblance than any other portion of the globe. It was greatly inferior to it in extent, but in the singularity, utility, va-

riety, and extent of its animal and vegetable productions, and in the civilization and number of its inhabitants, it was greatly superior.

To prepare the reader for the details which are to be furnished in the course of the following work, respecting this interesting and important subdivision of the globe, I shall in this short introduction lay before him a rapid sketch of the geographical, physical, and moral features of the country.

The Indian Archipelago, whether from number or extent of particular islands, is by far the greatest group of islands on the globe. Its length embraces forty degrees of longitude close to the line, namely, from the western extremity of the island of Sumatra, to the parallel of the Araoe islands, not including in this estimate the greater portion of the immense island of New Guinea, and its breadth thirty degrees of latitude, from the parallel of 11° south to 19° north, thus comprehending, with the intervening seas, an area of 4½ millions of geographical, or about 5½ millions of statute miles.

Its general position is between the great continental land of New Holland and the most southern extremity of the continent of Asia. It is centrically situated with respect to all the great and civilized nations of Asia, and lies in the direct and inevitable route of the maritime intercourse between them. Its eastern extremity is within three days sail of China; its western not above three weeks

sail from Arabia. Ten days sail carries a ship from China to the richest and most centrical portion of the Archipelago, and not more than fifteen are required for a similar voyage from Hindustan. Taking a wider view of its geographical relations, it may be added, that the voyage from Europe to the western extremity of the Archipelago, may be readily performed in ninety days, and has been often done in less, and that the voyage from the west coast of America may be effected in little more than one half that time. Such are the extraordinary advantages of the geographical and local positions of these fine countries.

The following short abstract of the topography of the Archipelago will serve our present purpose. The Archipelago contains three islands of the *first* rank in size, namely, Borneo, New Guinea, and Sumatra. These are not only the largest islands of the Archipelago, but the greatest of our globe, excluding, of course, the *continent* of New Holland. Of the *second* rank, it contains a peninsula and an island, viz. Java and the Malayan peninsula. Of the *third* rank, it contains three islands, viz. Celebes, Luzon or Luconia, and Mindanao, each of them equal in size to the greatest island of America. Of the *fourth* rank, it contains at least sixteen, which are as follow, beginning from the westward, viz. Bali, Lambok, Sambawa, Chandana, Flores or Măngarai, Timur, Ceram, Buroe, Gilolo,

Palawan, Negros, Samar, Mindoro, Panay, Leyte, and Zebu. Of the relative importance, value, and populousness of the different islands, the size is by no means a just test, as a slight knowledge of those enumerated will soon teach us. The principal advantage of the great islands arises from their capacity of affording large alluvial tracts, and considerable rivers, both of them from the facilities afforded by them for raising a supply of food, the principal circumstances which have contributed to promote population and civilization. We discover, that the great tribes which have influenced the destinies of the inferior ones, have all had their origin in the larger islands, and the most considerable in the most fertile. Many valuable islands of small size are excluded from the above enumeration, which will in the sequel demand a particular account. Besides such, the inspection of the map will discover a vast number of minute isles and islets, of which it may truly be said that they are *innumerable.*

The whole Archipelago is arranged into *groups* and *chains* of islands, with here and there a *great island* intervening. The islands are upon the whole thickly strewed, which gives rise to innumerable straits and passages which would occasion from their intricacy a dangerous navigation, were the seas of the Archipelago not distinguished, beyond all others, by the proximity of extensive tracts of land,—by

their pacific nature,—and by the uniformity of the prevailing winds and currents.

Five portions of the ocean which encompass or intersect the different islands of the Archipelago are of considerable extent, and tolerably free from islands. To these European navigators have given the name of *seas*. The first of these in extent is that portion of the China sea which lies between Borneo and the Malay peninsula; the second the tract of waters between Borneo and Java called the Java seas; the third that lying between Celebes on one side, Boeroe and Ceram on the other, and the chain of islands to the south, of which Timur and Timurlant are the most conspicuous; the fourth is the clear tract of ocean lying between Celebes and Borneo to the south and west, and Mindanao and the Sooloo chain of isles to the north, and which takes its name from the latter; and the fifth and last the basin formed by the Sooloo chain, Borneo, Palawan, the south-west side of the Philippines, and Mindanao.

The Bay of Bengal, and the Indian Ocean, wash the western shores of the Archipelago, the Great Pacific its southern and eastern shores, and the China sea its northern. The western boundary of the Archipelago is formed by the Malayan peninsula and Sumatra. Here there are two approaches only, viz. the Straits of Malacca and Sunda. The southern boundary of the Archipelago is formed by a long chain

of contiguous islands, the most singular which the physical form of the globe any where presents. It commences with Java, and terminates nearly with Timurlaut, running in a straight line almost due east and west, in a course of 1600 geographical miles. The approaches into the Archipelago from this quarter are numerous and narrow, proportionate to the number of islands, and their vicinity to each other. The most important, either from their safety, or their affording to the navigator the most convenient access to the most frequented portions of the Archipelago itself, or a thoroughfare to countries beyond it, are the straits between Java and Bali; between this and Lombok, between Lombok and Sambawa; between Sambawa and Ombo; between Ombo and Flores; and between Timur and Ombay.

The eastern boundary of the Archipelago is more extensive, broken, and irregular, than any of the rest. It is principally formed by the great islands of New Guinea, Gilolo, Mindanao, and Luconia. The approaches from this quarter are wider than from any other, and the largest are by navigators denominated *passages*, as the Gilolo passage, the Molucca passage, and the Mindanao passage, which names readily direct us to their situations. Towards the eastern and western ends of New Guinea, there are narrow accesses to the Archipelago, both of which receive the name of the illustrious navigator Dampier.

The northern barrier of the Archipelago is formed by the great islands of Luconia, Palawan, and Borneo. There are unsafe and intricate passages for the navigator between the principal chain of the Philippines, Palawan, and Borneo, but the great thoroughfare of the Archipelago, corresponding with the straits of Sunda, lies to the west of the latter island by three channels, formed by the two inferior islands of Billiton and Banca, in the passage between the great islands of Borneo and Sumatra.

The whole of the Archipelago is situated within the tropics. The equinoctial line runs nearly through its centre, and almost the whole, with the exception of the Philippines, is situated within ten degrees on each side of it. There is necessarily a general uniformity in climate, in animal and vegetable productions, and, of course, in the character of the different races of inhabitants. Notwithstanding this, a nearer acquaintance both with the country and its inhabitants soon points out to us that there is much diversity in both, and we shall find that the whole is capable of being subdivided into *five* natural and well-grounded divisions or classes. I shall briefly run over these, giving, as I go along, the most prominent characters which distinguish the one from the other. In delineating these characters, I shall consider the more civilized races only, for the habits of the mere

savages of all climates are nearly assimilated, for the influence of physical and local circumstances on the character of our species, does not become obvious and striking until society has made considerable advances. Beginning from the west, whence civilization appears to have originated, and from whence it spread to the east, the first division comprehends the Malayan Peninsula,—the island of Sumatra,—the island of Java,—the islands of Bali and Sombok,—and about two-thirds of the western part of Borneo, up to the parallel of longitude 116° east. The animal and vegetable productions of this quarter are peculiar, and have a higher character of utility than those of the other divisions; the soil is of superior fertility, and better suited for rearing vegetable food of the first quality. The civilized inhabitants have a general accordance in manners, language, and political institutions; they are far more civilized than those of the other divisions, and have made considerable progress in arts, arms, and letters. Rice is their food, and it is generally abundant.

The island of Celebes is the centre of the *second* grand division, which comprehends, besides that great island itself, the smaller ones on its coast, as Bouton and Salayer,—the whole chain of islands from the parallel of east longitude 116° to 124°, with the whole east coast of Borneo within

the same limit, and up to about 3° of north latitude. The animal and vegetable productions of this quarter have generally a peculiar character, the soil is of inferior fertility to that of the last, and less suited to the rearing of rice or corn of the first quality. The civilized inhabitants have made considerable progress in the useful arts, but their civilization is of an inferior type to that of the first division. In language, manners, and political institutions, they agree surprisingly among themselves, but differ widely from their western neighbours. Rice is their principal food, but it is not abundant, and some sago is occasionally used.

The *third* division differs in a most remarkable manner from all the rest. Its extent is from the parallel of longitude 124° to 130° E., and from south latitude 10° to north latitude 2°. The character of the monsoons is here reversed. The eastern monsoon, which is dry and moderate to the west, is here rainy and boisterous; the westerly monsoon, rough and wet in the two first divisions, is here dry and temperate. The greater number of the plants and animals of the two first divisions disappear in the third, where we have strange productions, in both kingdoms, unknown to any other parts of the world. This is the native country of the clove and nutmeg, and the only country in the world which produces them in perfection. For raising the higher classes of vegetable food, the

soil is of inferior fertility. Rice is scarcely produced at all, and the staple food of the people is sago. In language, manners, and political institutions, the people of this quarter agree among themselves, and differ essentially from all their neighbours. They are far inferior to the inhabitants of the first two divisions in civilization, in power, and in knowledge of useful arts. They never acquired of themselves the use of letters.

The *fourth* division is the least distinctly characterized, but points of dissimilitude sufficiently striking and obvious mark its character, to entitle it to be considered separately. It extends from the parallel of 116° E. longitude to about 128°, and from north latitude 4° to 10°, and includes the north-east angle of Borneo, the great island of Mindanao, and the Sooloo Archipelago. The vegetable products of this division are in a good measure peculiar, but partake, in some degree, of the character of those of the three first divisions united. The clove and nutmeg are indigenous, but of imperfect and inferior quality. Sago is very often consumed, but rice is, again, the principal article of food. In civilization the inhabitants are superior to those of the *third* division, and inferior to those of the *first*, or even of the *second*. Their language, manners, and institutions, are peculiar, agreeing among themselves, and differing from those of all their neighbours.

The *fifth* and last division is the well-known group of the Philippines, extending from the parallel of 10° to 19° of north latitude. A geographical situation so different from that of all the other countries of the Archipelago, produces much relative difference of climate and production. This division is the only portion of the Archipelago within the limit of the boisterous region of hurricanes, and this circumstance alone gives a peculiar character to the country. The soil is of eminent fertility, and rice is the food of the more civilized races. The mould is eminently favourable to the growth of the tobacco plant and sugar-cane, but produces neither the pepper of the *first* division, the fine spiceries of the third, nor some of the delicate and peculiar fruits which characterize those countries of the Archipelago which lie within ten degrees of the equator, and which are unknown to all other regions of the earth. The manners, the political institutions, and, above all, the language of the inhabitants, differ in genius and form from those of the inhabitants of all the other divisions.

Such are the particular characters of the different divisions of this great country. The more general features of the whole Archipelago, and those distinctive marks which characterize it from other portions of the world, are easily enumerated. It has the common characters of other tropical countries,—heat, moisture, and luxuriant vegetation.

It is throughout of a mountainous nature, and its principal mountains from one extremity to another are volcanoes. It is very generally covered with deep forests of stupendous trees. The number of grassy plains is very small, and there are no arid sandy deserts. It is distinguished from every cluster of islands in the world, by the presence of periodical winds, and from all countries whatever by the peculiar character of these. The Archipelago is the only country of Asia situated upon the equinoctial line, or very close to it. If not the most extensive, it is at least the *widest spread* region,—the region of most curious and various production, and of highest indigenous population which exists *anywhere* in the immediate neighbourhood of the equator. The insularity of the whole region, the contiguity of the different islands, and the facility and rapidity of the navigation, are also prominent and characteristic features. The animal and vegetable productions of the Archipelago either differ wholly from those of other countries, or are important varieties of them. In one quarter, even the principal article of food is such as man nowhere else subsists upon. The productions of the ocean are not less remarkable for abundance and variety than those of the land.

The distinctive features now described have necessarily produced the most extensive influence on the character and civilization of the inhabitants.

The most abject races only—those excluded by more powerful neighbours from the sea, are hunters, and the shepherd state can have no existence at all in countries destitute of grassy plains, and rendered almost impassable by the deepness of their forests. All migrations are by water. Their boats and canoes are, to the Indian islanders, what the camel, the horse, and the ox, are to the wandering Arab and the Tartar ; and the sea is to them what the *steppes* and the *deserts* are to the latter. The Indian islanders are, by necessity, navigators and fishermen, and, from this condition, the progress of civilization among them is to be traced. When population accumulated in this stage of social existence, those who were in the vicinity of fertile lands applied to agriculture, and became in time the most numerous and civilized races. The Indian islanders can never effect conquests on more civilized neighbours as did the barbarians of the north, from the want of those provisions, the existence of which was implied in the very nature of a Tartar camp, and the impossibility, therefore, of moving in great and overwhelming bodies. Beside the incapacity arising from this cause, it may be farther remarked, that although barbarians may acquire a sufficient skill in military tactics, to prove an overmatch for a more civilized enemy, they can never do so in naval tactics, which in their nature being of a more complex character, suppose a skill and progress in so-

ciety, which mere barbarians never attain; nor, did they even attain them, could a knowledge of naval affairs be supposed compatible with that necessary for conducting land operations. A *predatory warfare* is the only one suited to the genius of the Indian islanders; even their plundering incursions they have scarce ever carried beyond the limits of the Archipelago. These important facts ought to be kept in mind in every attempt to trace the history of their migrations, and in forming an estimate of their character and state of society.

In discussing the general features of the topography of the Archipelago, there are two prominent and important facts regarding the condition of the different races of inhabitants, which are of great interest and importance. The first of these refers to an original and innate distinction of the inhabitants into two separate races. In the Indian Archipelago there are—an aboriginal *fair* or *brown* complexioned race,—and an aboriginal *negro* race; and, the southern promontory of Africa excepted, it is the only country of the globe which exhibits this singular phenomenon. The second fact is not of less importance, and relates to the influence of food in forming the character of the different races. We may judge of the physical character of each country by the moral character of its inhabitants, or of the latter by the former. No country has produced a great or civilized race,

but a country which by its fertility is capable of yielding a supply of *farinaceous* grain of the first quality. Man seems never to have made progress in improvement, when feeding on inferior grains, farinaceous roots, on fruits, or on the pith of trees. The existence of fine spices, odoriferous gums, and, it may be added, gold, gems, and the rarer productions of the animal and vegetable kingdom, has no tendency in the state of society in which the Indian islanders are, to promote civilization. One might be almost tempted to think they were prejudicial to it, for the very countries in which they are most abundant, are among the least civilized of the Archipelago. It is the country of the cannibals of Sumatra which chiefly produces gold and frankincense; that of those of Borneo which produces gold, frankincense, camphor, and diamonds. The inhabitants of the Spice Islands never acquired the use of letters, and were wandering almost naked in their spicy forests, until the Hindus, the Javanese, Malays, and Arabs, in times comparatively very recent, taught them to clothe themselves with some decency. The savages of New Guinea, surrounded at this day by the most splendid, beautiful, and rare objects of animal and vegetable nature, live naked and uncultivated. Civilization originated in the west, where are situated the countries capable of producing corn. Man is

there most improved, and his improvement decreases, in a geographical ratio, as we go eastward, until, at New Guinea, the termination of the Archipelago, we find the whole inhabitants an undistinguished race of savages.

Engraved by W.H.Lizars

A PAPUA OR NEGRO
of the Indian Islands.

KĂTUT A NATIVE OF BALI
one of the Brown complexioned Race.

Edinburgh Published by Constable & Co. 1820.

BOOK I.

CHARACTER.

CHAPTER I.

PHYSICAL FORM OF THE INHABITANTS OF THE ARCHIPELAGO.

Two distinct races of inhabitants exist—a brown and a negro race.—Their geographical distribution.—Description of the brown race.—Stature.—Shape.—Features.—Their hair.—Complexion.—Comparison with other races of men.—The standard of personal beauty among them.—Description of the negro races.—Account of an individual by Major Macinnes.—Sir Everard Home's account of a Papuan brought to England by Sir S. Raffles.—Sonnerat's account of the Papuas of New Guinea.—The negro race to all appearance an inferior one to the brown-complexioned race.—Conjectures respecting the origin of the two races.—Indian islanders possess robust constitutions.—Diseases to which they are liable.—Fevers.—Small-pox.—Venereal disease.—Gout and Scrofula hardly known.—Cutaneous disorders very prevalent.—Intestinal worms.—Parturition.

THERE are *two* aboriginal races of human beings inhabiting the Indian islands, as different from each

other as both are from all the rest of their species. This is the only portion of the globe which presents so unusual a phenomenon. One of these races may generally be described as a brown-complexioned people, with lank hair, and the other as a black, or rather sooty-coloured race, with woolly or frizzled hair.

The *brown* and *negro* races of the Archipelago may be considered to present, in their physical and moral character, a complete parallel with the white and negro races of the western world. The first have always displayed as eminent a relative superiority over the second as the race of white men have done over the negroes of the west. All the indigenous civilization of the Archipelago has sprung from them, and the negro race is constantly found in the most savage state. That race is to be traced from one extremity of the Archipelago to another, but is necessarily least frequent where the most civilized race is most numerous, and seems utterly to have disappeared where the civilization of the fairer race has proceeded farthest, as in Sumatra, Java, and perhaps Celebes, just as the Caribs, and other savages of America, have given way to the civilized invaders of Europe. The negro races of the Archipelago increase in numbers in the inverse ratio of improvement, or, in other words, as we proceed eastward. In some of the Spice Islands their extirpation is matter of history.

They are the principal races in some of the islands towards New Guinea, and nearly the sole inhabitants of the portion of that great island itself, which, from its physical character, we have a right to include within the limits of the Archipelago.

A more particular account of both must now be given.

The brown-coloured tribes agree so remarkably in appearance among themselves, that one general description will suffice for all, and the varieties may generally be considered rather as objects of curious than useful distinction. Their persons are short, squat, and robust. Their medium height may be reckoned, for the men, about five feet two inches, and for the women, four feet eleven inches, which gives about four inches less than the average stature of Europeans. Their lower limbs are *rather* large and heavy, but not ill-formed. Their arms are rather fleshy than muscular. The bosoms of the females are small for the robustness of their frames, and the whole bust wants that elegance of symmetry which belongs to the women of Hindustan. The face is of a round form; the mouth is wide; the teeth, when not discoloured by art, remarkably fine; the chin is rather of a square form; the angles of the lower jaw remarkably prominent; the cheek-bones are high, and the cheek consequently rather hollow; the nose is short and small, never prominent, but never

flat; the eyes are small, always black, as with other orientals, among whom any other colour would be considered a monstrosity.

The complexion is generally brown, but varies a little in the different tribes. Neither climate, nor the habits of the people, seem to have any thing to do with it. The fairest races are generally towards the west, but some of them, as the Battaks of Sumatra, upon the very equator. The Javanese, who live most comfortably, are among the darkest people of the Archipelago; the wretched Dayaks, or cannibals of Borneo, among the fairest.

The hair of the head with the brown-coloured race is long, lank, harsh, and always black. There is a remarkable connection, it may here be observed, between the colour and texture of the hair and the colour of the complexion. The hair is dark and harsh in proportion as the complexion is dark, until, in the jet black African, it end in a woolly or frizzled texture. If, among Asiatic nations, an individual be discovered with a complexion of remarkable fairness, we may reckon upon finding the hair of a brownish hue, and of a soft European texture.

The hair on every part of the body of the Indian islander, the head excepted, is scanty. On the limbs and breast of the male there is no hair at all, and the beard is naturally very defective. The Mahomedan

priests, in imitation of the Arabs, are fond of wearing a beard, but the utmost they can obtain, by great care and assiduous culture, are a few straggling hairs, which make them an object of ridicule to those who pride themselves on this supposed evidence of manhood. The rest of the community pluck out, at an early period of life, what no pains would render respectable.

To express surprise at, or to attempt to account for this scarcity of hair with the Indian islanders, would be about as reasonable as to investigate the cause why other races have a superfluity. The fact of a scarcity of hair with a considerable portion of the human species is now well ascertained, and, whether in the present instance it bear any analogy to the defect of hair in the lower animals, common to all tropical countries, is of little moment. *

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* The following is the illustrious Dampier's excellent description of the brown-coloured race, in the persons of the people of Mindanao: "The Mindanayans, properly so called, are men of mean statures, small limbs, straight bodies, and little heads. Their faces are oval, their foreheads flat, with black small eyes, short low noses, pretty large mouths; their lips thin and red, their teeth black, yet very sound; their hair black and straight; the colour of their skin tawney, but inclining to a brighter yellow than some other Indians, especially the women. They have a custom to wear their thumb-nails very long, especially that on their left thumb, for they do never cut it, but scrape it often."—*Dampier's Voyages*, Vol. I.

Compared to Europeans, Arabs, Persians, Tartars, Bermans, and Siamese, the Indian islanders must be considered as an ill-looking race of people. In person they are by no means so handsome as the Chinese nations, who resemble the latter, but they have much better features. These notions of beauty are not relative, for the standard of beauty among the Polynesian tribes is nearly the same as among ourselves. The man that is considered handsome, or the woman that is pointed out as beautiful by an European, are the same that are allowed to be so by their own countrymen. Even with respect to colour, there is not that wide difference which might be expected in our tastes. They admire fairness of complexion, though naturally enough not the sickly hue of the European, the only form in which it is presented to their observation. They admire the complexion of the

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p. 325, 326.—Linschoten's account of the Javanese is also tolerably faithful.—"These Javans," says he, "are of verie fretfull and obstinate nature, of colour much like the Malayers, brown, and not much unlike the men of Brasilla; strong and well set, big limmed, flatte faces, broad thicke cheekes, great eye-browes, smal eyes, little beard, not past three or four hayres upon the upper-lippe and the chinne; the hayre on their heades very thyn and short, yet as blacke as pitche, whose picture is to be seen by the picture of the Malayen of Malacca, because they dwell and trafficke much together."—*Linschoten's Voyages*, p. 34.

half breed, and the Malays in their poetry often panegyrise a beauty of this class. The standard of perfection in colour is *virgin gold*, and as an European lover compares the bosom of his mistress to the whiteness of snow, the East Insular lover compares that of his to the yellowness of the precious metal. It is with the view of attaining this desired complexion, that the Javanese, when in full dress, smear their bodies with a yellow cosmetic. The complexion is scarce ever clear, and a blush is hardly at any time discernible in it. This, however, only distinguishes them from the European race, and not from any of the Asiatic races.

The Indian islanders most resemble in person and complexion the people of Siam and Ava, but they differ remarkably even from these, and are, in short, a very distinct people, very like among themselves, but very unlike all other people.

The Papua, * or woolly-haired race, of the Indian islands, is a dwarf African negro. A full grown male brought from the mountains of Queda, and examined with great care by my friend Major Macinnes, proved to be no more than four feet nine inches high. Among those brought from the other extremity of the Ar-

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* The word Papua is a corruption of *Pua-pua*, the common term by which the brown-complexioned tribes designate the whole negro race.

chipelago, from New Guinea and the adjacent islands, and whom I have seen as slaves, I do not think I ever saw any that in stature exceeded five feet. Besides their want of stature, they are of spare and puny frames. The skin, instead of being jet black as in the African, is of a sooty colour. Sir Everard Home, who carefully examined the individual brought to England by Sir S. Raffles, makes the following distinctions between the Papuan and African negro. "His skin (speaking of the former) is of a lighter colour, the woolly hair grows in small tufts, and each hair has a spiral twist. The forehead rises higher, and the hind head is not so much cut off. The nose projects more from the face. The upper lip is longer and more prominent. The lower lip projects forward from the lower jaw, to such an extent that the chin forms no part of the face, the lower part of which is formed by the mouth. The buttocks are so much lower than in the negro, as to form a striking mark of distinction, but the calf of the leg is as high as in the negro."

It is only, indeed, in mere exterior stamp that the puny negro of the Indian islands bears any resemblance to the African, who, in vigour of frame, and capacity for enduring fatigue and labour, is superior to all the rest of mankind, the European race excepted.

The East Insular negro is a distinct variety of the human species, and evidently a very inferior

one.* Their puny stature, and feeble frames, cannot be ascribed to the poverty of their food or the hardships of their condition, for the lank-haired races living under circumstances equally precarious,

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* The very same race extends to the Andaman islands. Symes, one of the most intelligent and interesting of oriental travellers, renders the following accurate account of the race. "The Andamaners are not more favoured in the conformation of their bodies, than in the endowments of their mind. In stature, they seldom exceed five feet; their limbs are disproportionally slender, their bellies protuberant, with high shoulders and large heads; and, strange to find in this part of the world, they are a degenerate race of negroes with woolly hair, flat noses, and thick lips; their eyes are small and red, their skin of a deep sooty black, whilst their countenances exhibit the extreme of wretchedness: a horrid mixture of famine and ferocity. They go quite naked, and are insensible of any shame from exposure."—*Syme's Embassy to Ava*, p. 130, 131.—In general, whenever the lank and woolly-haired races meet, there is a marked and wonderful inferiority in the latter. Close to the wretched inhabitants of the Andamans, we have the superior race of the Nicobars, of which Dampier gives the following interesting account:—"The natives of this island are tall well-limb'd men, pretty long-visag'd, with black eyes; their noses middle proportioned, and the whole symmetry of their faces agreeing very well. Their hair is black and lank, and their skins of a dark copper colour. The women have no hair on their eye-brows. I do believe it is pluckt up by the roots: for the men had hair growing on their eye-brows, as other people." If we compare the lank-haired race of New Zealand with the frizzled haired race of New Holland, the same striking contrast is still presented.

have vigorous constitutions. Some islands they enjoy almost exclusively to themselves, yet they have in no instance risen above the most abject state of barbarism. Whenever they are encountered by the fairer races, they are hunted down like the wild animals of the forest, and driven to the mountains or fastnesses incapable of resistance.

Such is the description which my own experience warrants me in giving of the negro races. A more robust people are said to occupy New Guinea and some of the islands near it, but I have seen none of them, and the accounts which voyagers have rendered of them are so indistinct and imperfect, that it is utterly impossible to come to any accurate conclusion respecting them. Forrest, who had good opportunities of observing them, is as usual most unsatisfactory. Sonnerat's account is the best, and I now transcribe it. "The Papuans," says he, "are the people who inhabit New Guinea and the islands lying near to it. They are not much known, and their country not much frequented. There is something hideous and frightful in their appearance. They are *robust* men of a shining black colour. Their skins are nevertheless harsh and rough, and disfigured by marks like those of the Elephantiasis. They have very large eyes, flat noses, and very wide mouths. Their lips, especially the upper one, very thick. Their hair is much curled and frizzled, and of a brilliant black,

or *fiery red.*" * This description is throughout vague and general, and the assertion that the hair is sometimes of a fiery red at the conclusion of it, throws discredit on the whole.

The question of the first origin of both the negro and brown-complexioned races, appears to me to be one far beyond the compass of human reason. By very superficial observers, the one has been supposed a colony from Africa, and the other an emigration from Tartary. Either hypothesis is too absurd to bear the slightest touch of examination. Not to say that each race is radically distinct from the stock from which it is imagined to have proceeded; the physical state of the globe, the nature of man, and all that we know of his history, must be overturned to render these violent suppositions possible.

The subject, notwithstanding, is one of such curious speculation and interest, that it cannot be passed over altogether in silence. It is by a comparison of languages,—of customs and manners,—of arbitrary institutions,—and by reference to the geographical and moral condition of the different races alone, that we can expect to form any rational hypothesis on this obscure subject. The only connection in language, manners, and customs, which exists between the inhabitants of the Archipelago, and any

* Voyage à la Nouvelle Guinée, par M. Sonnerat.

distant people which cannot be satisfactorily ascertained, is that with the negro races of Madagascar. At first view, therefore, we might be led to think, that the negroes of the Archipelago had emigrated from that country, or at least that they were the same race of men. This supposition, however, is soon disproved. The different negro tribes of the Archipelago have different languages among themselves; and all their languages differ completely from those of Madagascar, the agreement between which, and the languages of the Archipelago, originates not in the negro languages, but in those of the men of brown complexion. The coincidences, in point of arbitrary custom, are to be traced to the same source, as in the peculiar practice of the worship of ancestors, and in the singular custom of changing names at different periods of life. I have no hesitation in thinking, that the extraordinary coincidences in language and customs, which have been discovered between the people of the Archipelago and those of Madagascar, originated with the former. Every rational argument is in favour of this supposition, and none against it. It is, in the first place, more probable, that a numerous and civilized people should impose their language upon a ruder and less powerful people than the contrary. With the easterly monsoon, and the trade-wind, the improved and commercial races of the Archipelago might find their way to Ma-

dagascar without any insuperable difficulty; but we may pronounce it impossible, that the savages of Madagascar, with hardly any vessel better than a canoe, without a monsoon at all, and in the direct teeth of the trade-wind, should find their way to the Archipelago. The critical examination of language, which will be supplied in another part of this work, will enable us to determine, that, as far as language is concerned, the corresponding words will be found pure in the Polynesian language, and corrupt in that of Madagascar, a fact which leads us at once distinctly to the real source. We shall in vain refer to any known circumstance in the civil history of mankind, for an account of this singular connection. A few interesting hints are supplied to us, however, from the collation of language. The words of the languages of the Archipelago, discovered in that of Madagascar, are not fundamental, but such as imply advancement in civilization, as, for example, the numerals. They belong *particularly* to no living language in the Archipelago. There are no Sanskrit words at all in the language of Madagascar. The language, in short, which is common to both, is now a dead language, what I have called in another part of this work the great Polynesian language. These facts point at a connection of great antiquity, and lead me distinctly to assert, that the connection which existed between Madagascar and the Archipelago, originated in a state of society and manners different from what now

exists, and took place long before the intercourse of the Hindus, not to say of the Arabs, with the Indian Archipelago.

In our present state of knowledge, I fear we must pronounce that the origin of the nations which inhabit the Indian islands seems buried in unfathomable obscurity, and hardly appears less mysterious than that of the indigenous plants and animals of the country they inhabit.

Having rendered this account of the personal appearance of the Indian islanders, I shall take a view of their constitutions in the relations of health and disease. In treating of this subject, it is of the more civilized tribes alone I shall speak, and as it is one which peculiarly demands precision, my observations will chiefly refer to the Javanese, of whose condition alone, on matters so much in detail, I can speak confidently.

The Indian islanders possess strong and robust constitutions, capable in *their own climate* of withstanding much fatigue and privation; their minds, from the moral agency under which they are formed, certainly acquire a kind of premature ripeness earlier than in Europe; but their bodies do not. Puberty comes on at the same age as in Europe; the body continues to grow as long, women bear children to as late a period of life, and longevity, as a proof of all the rest, I believe to be just as frequent as there. These subjects will be discussed at greater length in the chapter on Population;

and to the same place I must refer for accounts of the relative mortality at different ages, which will be found under the head of the checks to the increase of population.

In the diseases of the Indian islanders, what will strike the European observer most forcibly, is the singular freedom of the people from inflammatory disorders, from that long train of complaints most frequent and most fatal in what we are pleased to call temperate climates. They are preserved from these by the flexibility of their fibres. The difference of their frames and ours is strikingly illustrated in the effect produced upon both by violent accidents, and surgical operations. They recover in sound health from accidents under which an European would sink; but let the same accident, as in the case of a surgical operation, happen to both, when reduced by sickness, and when the tendency to inflammation is removed in the European, the vigour of constitution which belongs to the latter will often enable him to survive an injury which would inevitably prove fatal to the native of a warm climate. *

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* "It is a common custom in that place to bargain with the executioner for mitigating the punishment; for there is never a day but the king orders a nose, eye, ear, hand, foot, or testicle, to be cut off from some body or other; and upon these occasions the executioner gets money for doing his business handsomely, and with little pain; for, if the criminal does not come up to his price, and pay him in ready money

Exposure to the inclemency of the seasons, which among us induces inflammatory disorders, brings on with the Indian islanders chiefly fevers and dysenteries; but it ought to be remembered, that as they live in a climate far less variable, and, for them at least, a much better climate than ours, diseases induced from this cause are far less frequent there than the parallel disorders in Europe.

The fevers which prevail are *remittents* and *intermittents* brought on by marsh *miasma*, the former often fatal, when in particular seasons they prevail as epidemic. Contagious distempers brought on by animal effluvia are quite unknown; and except the small-pox, the Indian islanders are fortunately strangers to every species of pestilential disorder of a fatal nature. To the opinion entertained on this subject by the most accurate European observers we may add the testimony of the natives themselves, who, when the most dangerous epidemic rages, never recur to contagion as the

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upon the spot, he will cut the nose, for instance, so deep, that the brain may be seen through the wound, or mangle a foot or a leg in two or three pieces, &c. In all these cruel mutilations, and even gelding itself, scarce any one dies, though some of the persons thus maimed are above fifty or sixty years of age; and the only remedy they use is, to put the wounded part immediately into water, and after it has bled a little, wash it and bind it up with linen cloths."—*Harris's Collection of Voyages and Travels*, Vol. I. p. 743.

cause. So mysterious a cause, if it had existed, could hardly have failed to have laid a deep hold of minds so superstitious. For a contagious disorder of this sort, I am not aware that any language of the Archipelago has even a name.

The most fatal disorder among the Indian islanders is the small-pox. Of the manner or the time in which it was introduced I can find no record. It is probable that the Arabs brought it with their commerce and religion, as the Europeans did a still more loathsome disorder with theirs. In the town of Yugyacarta on Java, where the whole mortality is one in forty-five, one tenth of all the children born die before fifteen years of age of this disorder.

The venereal disease is frequent in every part of the Indian islands, but particularly in Java. No precise information can be obtained respecting the time of its introduction. * The Javanese allege the time of its introduction into their island to have been that of the last Hindu king, *Browijoyo ;* but the death of that prince took place thirty-three years

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* Within ten years of the first appearance of the Portuguese in the Archipelago, the disease had spread throughout the whole of it, according to Pigafetta.—" Dans toutes les îles de cet Archipel que nous avons visitées règne la maladie de Saint-Job, et bien plus ici que par-tout ailleurs, où on l'appelle *for franchi ;* c'est-à-dire, *maladie Portugaise.*"—P. 215, 216.

prior to the first appearance of Europeans in the seas of the Archipelago. This pretence of the Javanese, however, according to their vague chronology, amounts to nothing more than ascribing the fact to the more recent portion of their ancient story; and is such as has been followed in many other instances besides the present. The venereal disease is called by them the *royal* distemper,—a name which, in all probability, they borrowed from the Europeans, to whom the introduction of the disorder, there is little doubt, ought to be ascribed.

A disease, analogous to the venereal, called *Patek*, prevails in Java. It is in fact the Yaws or Sivvens, and its introduction is ascribed to the Chinese.

Gout, the disease of luxury, and of those who consume animal food largely, is a malady unheard of among the Indian islanders of any rank. Of *scrofula* I have scarcely discovered any indications. *Stone* is very rare; and *dropsies* are not frequent.

Apoplexy, paralytic disorders, and epilepsy, are rarer than in Europe.

Cutaneous disorders of many kinds, several of them unknown to Europeans, are very common. The natives themselves ascribe them generally to the extensive consumption of fish; and point out several races of men nearly Ichthyophagi, whose bodies, in consequence of their diet, are perpetually covered by a loathsome scurf. *

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* "The Mindanao people are much troubled with a sort of leprosie, the same as we observed at Guam. This distemper

Among children the most frequent and fatal disorders arise from worms in the intestines, which may be ascribed to the unrestricted and constant use of raw vegetables and fruit. We are surprised to find the Indian islanders wholly unaware that teething is the cause of disease in infants. This may possibly in some measure be owing to their own want of observation, but more likely in a great degree to the extraordinary mildness of the symptoms of dentition in their climate.

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runs with a dry scurf all over their bodies, and causeth great itching in those that have it, making them frequently scratch and scrub themselves, which raiseth the outer skin in small whitish flakes, like the scales of little fish when they are raised on end with a knife. This makes their skins extraordinary rough, and in some you shall see broad white spots in several parts of their body. I judge such have had it, but are cured; for their skins were smooth, and I did not perceive them to scrub themselves; yet I have learnt from their own mouths, that these spots were from this distemper. Whether they use any means to cure themselves, or whether it goes away of itself, I know not; but I did not perceive that they made any great matter of it, for they did never refrain any company for it. None of our people caught it of them, for we were afraid of it, and kept off. They are sometimes troubled with the small-pox; but their ordinary distempers are fevers, agues, fluxes, with great pains and gripings in their guts. The country affords a great many drugs and medicinal herbs, whose virtues are not unknown to some of them that pretend to cure the sick."—*Dampier's Voyages*, Vol. I. p. 334.

The process of parturition and childbearing among the nations of the Indian islanders is easy, expeditious, and safe, compared to what it is in Europe. A Javanese woman, it is always reckoned, may safely go abroad in five days after her confinement. I am convinced that comparatively very few lives are lost in childbirth. *

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* Those wens of the neck, called Goitres in Europe, are very frequent throughout the Archipelago, among the inhabitants of the valleys at the bottom of mountains, but can hardly be called diseases, as they are not attended by either pain or inconvenience. They seem to be caused by the dense and moist air breathed in these situations, since they neither occur in the plains nor in the pure air of the mountains.

CHAPTER II.

MANNERS AND CHARACTER OF THE INDIAN ISLANDERS.

Classification of the subject.—Bodily endowments.—Indian islanders athletic, but never active.—Defective in personal cleanliness.—Temperate in their diet.—Their indolence occasioned by moral agency, and not constitutional.—Their fortitude.—Intellectual faculties.—Comparison between those of the Indian islanders and the people of Europe and the continent of Asia.—Are of slow comprehension and narrow judgment.—All their intellectual faculties in general feeble —Are good imitators, and have remarkably delicate ears for musical sounds.—Their faculties weak from want of exercise, but not perverted by false impressions.—Moral and social qualities.—Their virtues.—Distinguished from the more polished nations of Asia by their freedom from mendacity.—Their probity and candour.—Are capable of attachment and gratitude.—Free from the spirit of litigation.—Not naturally cruel.—Not irascible.—Seldom use opprobrious language.—Hospitality.—Politeness.—Freedom from bigotry.—Weaknesses of the Indian islanders.—Extraordinary credulity and superstition.—Examples.—Revenge the most prominent vice in the character of the Indian islanders. —Running of mucks.—Disregard of human life.—Indian islanders accused of perfidy and faithlessness.—Insecurity of property.—Domestic relations.—State of women much more favourable than among the more civilized nations of continental Asia.—Not usually secluded.—Female chastity.—Jealousy.—Anecdotes.—Relation between parent and child. —Fraternal affection.—Friendship a tie unknown to them.

—Attachment between chiefs and retainers.—Attachment to their tribe or society.—Attachment to their place of birth.

On the interesting and important subject of manners and character, there is much diversity among the different tribes; but the general outlines agree, and among the more civilized tribes, whose manners alone are worth describing at large, the diversity consists, in general, rather in degrees and minute particulars than in any essential difference. Whenever it is of practical importance that the distinction should be noted, I shall take care to record it as I proceed. The description of the manners of the islanders may be classed under the three following heads; 1. An account of their bodily endowments; 2. Of their intellectual qualifications; and 3. Of their social qualities. The Javanese holding the first rank in civilization and numbers, and being the nation with which I am most intimately acquainted, I shall hold them chiefly in view when I attempt to delineate the character of the Indian islanders.

The bodily constitution and personal appearance of the Indian islanders have been already treated of, and, therefore, I shall confine myself in this place to an account of those qualities of their minds which are more immediately connected with their physical constitution.

For a people below the middle size of Europe-

ans, and feeding almost solely on a vegetable diet, the Indian islanders are a strong and athletic people. In their personal exertions they are slow and persevering, but not active. It is not unusual to see porters in Java carry a heavy load thirty miles a-day for several days successively, going at their quickest pace, seldom more than three miles an hour. They never possess agility; they can neither run nor leap; they never attempt feats of activity; and among them one never sees any of those crowds of vagabonds that in other countries of Asia earn a livelihood by tumbling and slight of hand.

Like all people in the lower stages of civilization, the Indian islanders are defective in personal cleanliness. The heat of the climate, and the preservation of health, render it a matter of enjoyment, and almost of necessity to bathe frequently. This operation, therefore, they constantly perform, as well in the foulest pools as in the purest brooks, and both children and grown persons are to be seen paddling in the water at all hours of the day.*

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* "They always wash after meals, or if they touch any thing that is unclean; for which reason they spend abundance of water in their houses. This water, with the washing of their dishes, and what other filth they make, they pour down near their fire-place; for their chambers are not boarded, but floored with split bamboes, like lath, so that the water presently falls underneath their dwelling rooms, where it breeds maggots, and makes a prodigious stink. Besides this filthiness,

Notwithstanding this, they seldom change their garments, which are charged with a load of animal effluvia, and among the humbler classes often permitted to drop off in rags. To save appearances in some measure, they are fond of wearing dark-coloured cloths. Men and women wear, in the affected phrase of Gibbon, a profusion of "populous" hair, the disposal of the inhabitants of which, under very aggravated circumstances, is a most nauseous spectacle frequently presented in the streets and highways.

In point of diet, all the Indian islanders are temperate, and even abstemious, if compared to Europeans. I do not mean to assert that they are satisfied with a pittance. Their frames are robust, and they often labour severely; but under all circumstances, a pound and a quarter of rice, a few spiceries, and a meagre portion of animal food, most frequently fish, is an ample daily allowance

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the sick people ease themselves and make water in their chambers; there being a small hole made purposely in the floor, to let it drop through. But healthy sound people commonly ease themselves and make water in the river. For that reason, you shall always see abundance of people, of both sexes, in the river, from morning till night; some easing themselves, others washing their bodies or clothes. If they come into the river purposely to wash their clothes, they strip and stand naked till they have done; then put them on, and march out again. Both men and women take great delight in swimming and washing themselves, being bred to it from their infancy."—*Dampier's Voyages*, Vol. I. p. 329, 330.

for an adult.* Some of the maritime tribes on a religious principle abstain from the use of fermented liquors. The Javanese, who are restrained by no such prejudice, notwithstanding, seldom commit any excess in the use of them, so that the disgusting spectacle of a habitual drunkard is seldom presented among them. At their own feasts and entertainments, they occasionally drink heartily and even to inebriety. The chiefs on such occasions rise up and dance, and in a bacchanalian frenzy often do many extravagant things. About ten years ago, the son of a chief of the province of Jipang, possessed with the belief of his own invulnerability, put the matter to the test, and drawing his kris, killed himself on the spot. Many examples of the same kind have occurred. This practice of drinking freely at public entertainments, now confined to the Javanese, appears at one time to have been common to all the tribes before their conversion to Mahomedanism.

Against the Javanese a charge has been set up, as against the Americans, of coldness and apathy on the part of the men towards the women, and

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* "They live very soberly, and for the most part upon rice, to which the richer sort may add a small matter of fish, and a few herbs; and he must be a great lord indeed that in a day's time eats a hen boiled or broiled upon the coals. It is a common saying among them, that if there were two thousand Christians in that country, all their beef and fowls would quickly be consumed."—*Stavorinus's Voyages*, p. 743.

the latter have been accused of partiality to strangers. Whatever justice there may be in the former accusation,—and to ascribe less warmth of constitution to those who live almost exclusively on vegetable food, than to those into whose diet a larger share of animal food enters,—appears not unreasonable; the latter seems highly improbable as a feature of national character with any people, more particularly where the women are neither treated with cruelty nor neglect.

The respective tribes may be counted industrious or indolent in proportion to their civilization or barbarity. Wherever tranquillity and security exist to any degree, the islanders are found to be industrious like other people in the same circumstances. * Their frames are suited to the climate they live in; they have no constitutional listlessness nor apathy, and wherever there exists a reasonable prospect of advantage, they are found to

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* "They are endued with good natural wits, are ingenious, nimble, and active when they are minded; but generally very lazy and thievish, and will not work except forced by hunger. This laziness is natural to most Indians; but these people's laziness seems rather to proceed, not so much from their natural inclinations, as from the severity of their prince of whom they stand in awe: for he dealing with them very arbitrarily, and taking from them what they get, this damps their industry, so they never strive to have any thing but from hand to mouth."—*Dampier's Voyages*, Vol. I. p. 326.

labour with vigour and perseverance. But as civilization among even the most improved is but in an early stage, and even their best forms of government are wretched, and confer little security on person and property, their character feels the influence, and they may one and all be pronounced an indolent race, many of them to listlessness and apathy. Ordinary European observers perceiving this character, and making no allowance for the powerful agency under which it is formed, hastily pronounce the whole race incurably and constitutionally indolent. The Dutch have been fond of comparing the Javanese to their own favourite animal the buffalo, and denounce them as dull, sluggish, and perverse. Both the man and the animal, I believe, are calumniated. It would be more just to observe, that the Javanese, like his buffalo, is slow, but useful and industrious, and, with kind treatment, docile and easily governed.

The Indian islanders are throughout gifted with a large portion of fortitude, but their courage consists rather in suffering with patience, than in braving danger. They are almost always superior to the fear of death, and when their vengeance is roused, are capable of acts of desperate valour, bordering almost on insanity. *

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* "The punishments inflicted at Batavia are excessively

With respect to their intellectual faculties, the Indian islanders may be pronounced slow of com-

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severe, especially such as fall upon the Indians. Impalement is the chief and most terrible.

"In the year 1769 I saw an execution of this kind, of a Macassar slave, who had murdered his master, which was done in the following manner: The criminal was led, in the morning, to the place of execution, being the grass plat, which I have before taken notice of, and laid upon his belly, being held by four men. The executioner then made a transverse incision at the lower part of the body, as far as the *os sacrum*; he then introduced the sharp point of the spike, which was about six feet long, and made of polished iron, into the wound, so that it passed between the back-bone and the skin. Two men drove it forcibly up, along the spine, while the executioner held the end, and gave it a proper direction, till it came out between the neck and shoulders. The lower end was then put into a wooden post, and rivetted fast; and the sufferer was lifted up, thus impaled, and the post stuck in the ground. At the top of the post, about ten feet from the ground, there was a kind of little bench, upon which the body rested.

"The insensibility or fortitude of the miserable sufferer was incredible. He did not utter the least complaint, except when the spike was rivetted into the pillar; the hammering and shaking occasioned by it seemed to be intolerable to him, and he then bellowed out for pain; and likewise once again, when he was lifted up and set in the ground. He sat in this dreadful situation till death put an end to his torments, which fortunately happened the next day, about three o'clock in the afternoon. He owed this speedy termination of his

prehension, but of sound, though narrow judgment. In quickness, acuteness, and comprehen-

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misery to a light shower of rain, which continued for about an hour, and he gave up the ghost half an hour afterwards.

"There have been instances, at Batavia, of criminals who have been impaled in the dry season, and have remained alive for eight, or more days, without any food or drink, which is prevented to be given them by a guard who is stationed at the place of execution, for that purpose. One of the surgeons of the city assured me, that none of the parts immediately necessary to life are injured by impalement, which makes the punishment the more cruel and intolerable; but that, as soon as any water gets into the wound, it mortifies, and occasions a gangrene, which directly attacks the more noble parts, and brings on death almost immediately.

"This miserable sufferer continually complained of unsufferable thirst, which is peculiarly incident to this terrible punishment. The criminals are exposed, during the whole day, to the burning rays of the sun, and are unceasingly tormented by numerous stinging insects.

"I went to see him again, about three hours before he died, and found him conversing with the bystanders. He related to them the manner in which he had murdered his good master, and expressed his repentance and abhorrence of the crime he had committed. This he did with great composure; yet an instant afterwards he burst out in the bitterest complaints of unquenchable thirst, and raved for drink, while no one was allowed to alleviate, by a single drop of water, the excruciating torments he underwent."—*Staverinus's Voyages*, p. 288—291.

siveness of understanding, they are far short of the civilized nations of Europe, and in subtlety they are not less inferior to the Hindus and Chinese.

When the Dutch speak of the intellectual capacity of the Javanese, they find it necessary to qualify the favourable judgment which they pronounce on individual characters, by such expressions as "a respectable Javanese understanding," —"a sound Javanese judgment." In rendering an account of these people to a stranger, such expressions are indispensably necessary, for it must be confessed that an Indian islander of the best capacity is unequal, in most respects, to an individual not above mediocrity in a civilized community. In matters connected with the ordinary business of life, as it refers to their own situation, their judgment seldom errs, but where a wider range of thought is demanded, they are sure to be bewildered, to act with indecision, and betray their incapacity.

All the faculties of their minds are in a state of comparative feebleness; their memories are treacherous and uncertain; their imaginations wanton and childish; and their reason, more defective than the rest, when exerted on any subject above the most vulgar train of thought, commonly erroneous and mistaken. No man can tell his own age, nor the date of any remarkable transaction in the

history of his tribe or country. If a peasant has been present at some remarkable transaction, such as a murder or a robbery, and is examined ten days after in a court of justice, the probability is, that he can tell neither the hour of the day, nor the day at which such transaction took place, still less give a clear account of what happened.

The weakness of their reason, and the pruriency of their imagination, make them to a wonderful degree credulous and superstitious.

Two qualities they possess in a degree which far outstrips their other powers.—In common with all semibarbarians, they are good imitators; but in this respect they fall short of the Hindus. They exceed these, however, and, I believe, all other semibarbarians, in the second quality, their capacity for music. They have ears of remarkable delicacy for musical sounds, and are readily taught to play, upon any instrument, the most difficult and complex airs.

Their faculties, such as they are, are not perverted by false impressions. They are weak from want of exercise and culture, but not distorted and diseased by the habitual influence of false refinement and erroneous education, like most of the other nations of Asia. Of the Javanese my intimate knowledge of them entitles me to speak more distinctly. They have an abundant share of laud-

able curiosity,* and an anxious desire for knowledge. The influence of this character was most remarkably displayed in the family of *Adimanggolo*, chief of the province of Samarang, a man, for vigour of understanding, for sagacity and intelligence, far superior to all his countrymen. This respectable chieftain bestowed the most unwearied attention upon the education of his whole family. His wife, born a princess, whom, according to the cus-

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* This curiosity is, to be sure, apt now and then to take an idle and ridiculous direction; as when Sir James Lancaster, Elizabeth's ambassador, was requested by the king of Achin to sing one of the Psalms of David, at his audience of leave. "And when the general took his leave, the king said unto him, "Have you the Psalms of David extant among you?" The general answered, "Yea, and we sing them daily." "Then," said the king, "I and the rest of the nobles about me will sing a psalm to God for your prosperity;"—and so they did very solemnly. And after it was ended the king said, "I would have you sing another psalm, although in your own language;" so there being in the company some twelve of us, we sung another psalm; and after the psalm ended, the general took his leave of the king, the king showing him much kindness at his departure, desiring God to bless us in our journey, and to guide us safely to our own country, saying, "If hereafter your ship return to this port, you shall find as good usage as you have done."—*Purchas*, Vol. I. Book ii. p. 160. In all likelihood, the good Mussulmans, on the above occasion, chaunted a chapter of the Alcoran, mistaken by the ambassador for a psalm of David.

tom of the country, he espoused while yet a girl, he educated, to make him a rational and equal companion, and both she and his three daughters made proficiency in Arabic literature, and were skilled in that of their own country. Two of his sons, upon whom he had bestowed all the education that Java could afford, were sent by him to an English seminary in Calcutta, under the protection of the late lamented Earl of Minto, where they made surprising progress. The eldest, *Raden Saleh*, a youth about sixteen, read and wrote the English language with facility and propriety, and, with the help of a fine ear, acquired so accurate a pronunciation, that his language could not easily be discerned from that of a well-educated English youth. That this was not a mere mechanical acquirement, was satisfactorily proved by the good sense and acuteness of his observations; and it must be acknowledged, that, upon the whole, he afforded a most flattering and interesting example of what a liberal education might effect upon the character of the inhabitants of the Indian islands.

An account of the *moral* and *social* qualities of the Indian islanders may be conveniently arranged under the three heads of their *virtues*, their *weaknesses*, and their *vices*, and the whole may be summed up by an estimate of their character in their domestic, social, and political relations. To begin with their

virtues; they are honourably distinguished from all the civilized nations of Asia by a regard for truth. The British gentlemen who had much intercourse with the Javanese, were forcibly struck with this valuable feature of their character, and did not fail to contrast their singular and unexpected candour with the almost universal disregard of truth which characterizes the inhabitants of Hindustan. In courts of justice the truth was readily elicited, and we had seldom to complain of perjury or prevarication. In a great number of cases the prisoner himself would acknowledge his offence, and often, without a particle of extenuation, furnish an ample detail of all the circumstances of his own criminality.

They have no capacity for intrigue, and, in their conduct, we do not discover them at any time pursuing those dexterous expedients, and subtle practices, of which the whole lives of other Asiatic people so frequently consist. The natives of Arabia, of Hindustan, and China, find it an easy matter to circumvent them, and, while inferior in courage, and often in real capacity, they seem, in all ages of their history, to have made a gainful business of the practice of their knavery.

The Indian islanders are capable of attachment, gratitude, and fidelity, and it would be difficult to quote among them any instances of the flagrant and revolting violation of those virtues, by which the

Hindus have rendered their name so odious to Europeans.

In their external deportment they are grave, reserved, cautious, courteous, and obsequious. Their flattery is not artful, and they make very poor sycophants. This portion of their character is directly referable to the despotic nature of their political institutions.

The Indian islanders are neither litigious, avaricious, nor rapacious; but, I think, sufficiently tenacious of their rights. Considering the form of government under which the Javanese live, I have been surprised to find with what boldness they demand justice, and with what pertinacity they maintain their cause. A petition, for example, is not unfrequently summed up by such expressions as the following: "I have been wronged. I will not submit to it, and I demand justice." It is in suing for justice, rather than in defending themselves, that this trait of character is chiefly exemplified. This is because the accuser is generally in the right. The injury they have received makes a deep impression upon them, and all the bearings of the aggression are familiar to their minds, so that before the judge, while they preserve decorum, they often argue their cause in a tone of vehement though simple eloquence.

Excluding their conduct in a state of hostility towards the public enemy, and the excesses

into which the wanton exercise of despotism seduces the possessors of it, they are not cruel nor unfeeling. In their legal punishments there are no symptoms of inhuman refinement, the origin of which can be traced to their own manners. Even robbers neither mutilate, torture, nor murder those whose property they take. The conduct of superiors to their dependents is marked by kindness, gentleness, and consideration; and even slaves are never treated with a wanton barbarity. They are not without sympathy for distress, and as ready to relieve it as any people. A native of continental India would see a man struggling for life in the water and afford him no assistance. The active exertions of a Javanese, a Malay, or native of Celebes, would, under the same circumstances, be exerted for his rescue.

They are good humoured and cheerful to a remarkable degree, and owing to the habitual caution which their manners impose, so little irascible, that one seldom sees them ruffled. Between a fretful expression, and the last degree of guilty excess, there are few gradations.

Gross and abusive language never occurs in their intercourse. Their languages hardly afford any such expressions. The harshest words which a Javanese will use towards an inferior, are "goat" or "buffalo," words equivalent in their mouths to *goose* or *ass* in ours.

Hospitality is a virtue very universally practised. In Java a traveller can never be at a loss. The custom of the country makes it a point of honour with a Javanese to supply every stranger with food and accommodation for a day and a night at least. How natural hospitality is to their manners, may be seen from the practice of it having thus grown into an established usage. The practice of this virtue is extended to foreigners, and an European never fails to meet among them with a simple but affectionate welcome, which he will hardly fail to contrast with the heartless and repugnant estrangement, under the same circumstances, of the natives of continental India.*

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* "After this the citizens of Mindanao came frequently aboard, to invite our men to their houses, and to offer us pagallies. It was a long time since any of us had received such friendship, and therefore we were the more easily drawn to accept of their kindnesses; and in a very short time most of our men got a comrade or two, and as many pagallies: especially such of us as had good clothes, and store of gold, as many had, who were of the number of those that accompanied Captain Harris over the isthmus of Darien, the rest of us being poor enough. Nay, the very poorest and meanest of us could hardly pass the streets, but we were even hailed by force into their houses, to be treated by them; although their treats were but mean, viz. tobacco, or betel-nut, or a little sweet spiced water. Yet their seeming sincerity, simplicity, and the manner of bestowing these gifts, made them very acceptable. When we came to their houses, they would always be praising the English, as declaring that the English and Mindanaians were all

In such a condition of society as that of the Indian islanders, the absence of public security, and of a regular administration of justice, leaves in a great measure the power of avenging injuries in the hands of individuals. Every man has arms in his own hands to avenge his quarrel or his wrong. The point of honour is, in consequence of the exercise of this privilege, often as punctiliously observed by the peasant of Celebes as by a French or English gentleman. In the demeanour of the Indian islanders there is a large share of natural politeness. Among the more scrupulous, a contemptuous or haughty manner, still less an abusive expression, and, above all, a blow, will not for a moment be tolerated. The *kris* is at hand ready to avenge the insult. Every man knows this, and the result is, as already stated, a guarded demeanour and an universal politeness. All the tribes of the Indian islands pride themselves on this, and never offer an

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one. This they expressed by putting their two fore-fingers close together, and saying, that the English and Mindanaians were samo, samo, that is, all one. Then they would draw their fore-fingers half a foot asunder, and say the Dutch and they were bugeto, which signifies so, that they were at such distance in point of friendship: And for the Spaniards, they would make a greater representation of distance than for the Dutch. Fearing these, but having felt, and smarted from the Spaniards, who had once almost brought them under."—*Dampier's Voyages*, Vol. I. p. 358, 359

indignity even to a stranger who could not defend himself.

I shall conclude this review of the virtues of the Polynesian tribes, by remarking, that they are neither bigoted nor intolerant with respect to any class of opinions or practice, civil or religious. They bear no rancour towards strangers, but readily tolerate their opposite manners, customs, and religions.

Under the head of *weaknesses*, I shall chiefly consider the credulity and superstition of the Indian islanders. There is indeed no people more simple, credulous, and superstitious. It would require a volume to describe all the forms under which these weaknesses are displayed, but as the reader will become better acquainted with the character of the people by being furnished with a few examples, I shall attempt to give him the necessary information at some length, confining myself chiefly to such as have fallen under my own observation. They believe in dreams, in omens, in fortunate and unfortunate days, in the casting of nativities, in the gift of supernatural endowments, in invulnerability, in sorcery, enchantments, charms, philtres, and relics. There is not a forest, a mountain, a rock, or a cave, that is not supposed the habitation of some invisible being, and not content with their own stock of these, their comprehensive faith has admitted those of Western India, of Ara-

bia, and of Persia. To lend an implicit belief to all these, characterizes alike the high and the low, from the prince to the peasant. These superstitions are generally harmless and inoffensive, but, at other times, the delusions to which credulity exposes these people operate in the most dangerous and formidable manner.

Of the less dangerous forms which it takes, I shall give as an example the frequent practice of professed robbers in Java of throwing a quantity of earth from a newly opened grave into the house they intend to plunder, with an implicit belief in its potency in inducing a *deadly* sleep. Having succeeded in casting a quantity of this earth into the house, and, if possible, into the beds of the inhabitants, they proceed with confidence in their plunder. It is not the robber alone that has an entire belief in the efficacy of this practice; the conviction is equally strong on the minds of those who are the objects of his depredations. Quantities of the earth, carefully preserved in cases, have been repeatedly brought to me in the course of my official duties found on the persons of robbers, who did not fail, when interrogated, to be very explicit in their accounts of its effects.

The baleful effects of superstition on the minds of an ignorant and untutored people, is exemplified in the laws against sorcery, found in the ancient code of Java, which is in force at this day in

Bali. The following is an example :—" If a person write the name of another on a shroud, or on a bier, or on an image of paste, or on a leaf which he buries, suspends from a tree, places in haunted ground, or where two roads cross each other, this is *sorcery*. If a man write the name of another on a scull, or other bone, with a mixture of blood and charcoal, and places the same at his threshold in water, this also is *sorcery*. Whatever man does so, shall be put to death by the magistrate. If the matter be very clear, let the punishment of death be extended to his parents, to his children, and to his grandchildren. Let no one escape. Permit no one related to one so guilty to remain on the face of the land, and let their property of every description be confiscated. Should the parents or children of the sorcerer reside in a distant part of the country, let them be found out and put to death, and let their property, though concealed, be sought for and confiscated."

When the proper cord is touched, there is hardly any thing too gross for the belief of the Indian islanders. This degree of infatuation is best known to us, as it affects the character of the Javanese. It is not improbable that, were we equally well acquainted with the rest of the tribes, we might discover examples of credulity equally surprising. The more agitated and varied life which the maritime tribes pursue, and their more extensive in-

tercourse with foreigners, may preserve them in some measure from becoming victims to so diseased a degree of credulity as that of which the Javanese afford such extraordinary instances. Two of these of a most singular nature I shall now quote. Some years ago it was discovered, almost by accident, that *the scull of a buffalo* was superstitiously conducted from one part of the island to another! The point insisted upon was never to let it rest, but keep it in constant progressive motion. It was carried in a basket, and one person was no sooner relieved from the load than it was taken up by another; for the understanding was, that some dreadful imprecation was denounced against the man who should let it rest. In this manner the scull was hurried from one province to another, and after a circulation of many hundred miles, at length reached the town of Samarang, the Dutch governor of which seized it and threw it into the sea, and thus the spell was broke. The Javanese expressed no resentment, and nothing further was heard of this unaccountable transaction. With whom, or where it originated, no man could tell.

In the month of May 1814, it was unexpectedly discovered, that in a remote but populous part of the island of Java, a road was constructed, leading to the top of the mountain *Sumbeng*, one of the highest in the island. An inquiry being set on foot, it was discovered that the delusion which gave

rise to the work had its origin in the province of *Banyumas*, in the territories of the Susunan, that the infection spread to the territory of the Sultan, from whence it extended to that of the European power. On examination, a road was found constructed twenty feet broad, and from fifty to sixty miles in extent, wonderfully smooth and well made. One point which appears to have been considered necessary was, that the road should not cross rivers, the consequence of which was, that it winded in a thousand ways, that the principle might not be infringed. Another point as peremptorily insisted upon was, that the straight course of the road should not be interrupted by any regard to private rights; and in consequence trees and houses were overturned to make way for it. The population of whole districts, occasionally to the amount of five and six thousand labourers, were employed on the road, and among a people disinclined to active exertion, the laborious work was nearly completed in two months; such was the effect of the temporary enthusiasm with which they were inspired. It appeared in the sequel, that a bare report had set the whole work in motion. An old woman had dreamt, or pretended to have dreamt, that a divine personage was about to descend from heaven on the mountain Sumbeng. Piety suggested the propriety of constructing a road to facilitate his descent, and divine vengeance, it was rumoured, would pursue

the sacrilegious person who refused to join in the meritorious labour. These reports quickly wrought on the fears and ignorance of the people, and they heartily joined in the enterprise. The old woman distributed slips of palm leaves to the labourers, with magic letters written upon them, which were charms to secure them against wounds and sickness. When this strange affair was discovered by the native authorities, orders were given to desist from the work, and the inhabitants returned without murmur to their wonted occupations.

It seldom, however, happens in Java that these wide-spread delusions terminate so happily as in the instances which I have quoted. They are much more frequently accompanied by formidable insurrections, and take place in times of anarchy, or when a province is goaded to resistance by excessive extortion, or other form of malgovernment. When a province is in this unfortunate situation, the most contemptible pretender will have a crowd of followers; and one of any talents will be sure to head a formidable revolt. Hence the crowd of pretenders under the name of *Kraman*, that in all ages have disturbed the peace of Java.* Hardly a year passes

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* Kraman is a word of the Javanese language meaning "rebel."

that some vagabond does not declare himself a king, a saint, or a prophet, proclaiming his intention of redressing some earthly grievance, or pointing out some new road to Heaven. Some of those impostors go the length of preaching a new religion, whilst others content themselves with declaring their lineal descent from some popular monarch of ancient Javan story. The kingdom of Cheribon had, about a dozen of years ago, in the worst days of Dutch rule, become the victim of the grossest mismanagement; and in the course of a few years, seven or eight of these impostors sprung up. One of them, imagined by the Dutch authorities, from his pompous title, the credit he acquired with the people, and the number of his followers, to have been a person of weight and talent, was discovered, on his apprehension, to be a wretched old man, covered with rags and sores. Another was a boy not above fourteen years of age. The most formidable was *Bagus Rangen*, who, after disturbing the province for six years, was not apprehended until 1812, during the British administration. This person, a man of mean origin, without the advantages of education, and of a capacity not above mediocrity, pretended to be the founder of a new religion. Amidst Mahomedans he decried the doctrines of Mahomed without art or caution, and yet the people crowded round his standard; and, at

times, ten thousand followers have been known to have attended him.

These more general delusions, as already mentioned, may, as far as our information extends, be considered to belong more particularly to the character of the Javanese. On minor occasions, the maritime tribes are not a jot less superstitious. On the superstitious attachment to relics, they even go beyond them. Among the people of Celebes this is carried to an extravagance not easily credited. The regalia of the different states consist of a parcel of rusty iron weapons, such as krises, hangers, spears, and other still greater trifles, which are held in the most religious veneration ; nay, the possession of them is held indispensably necessary to the security of the government ; no prince being sure of the allegiance of his subjects that wants them. The regalia of Macassar were, about forty years ago, in the hands of the Bugis sovereigns of Boni, and they consequently acquired such an ascendancy in the affairs of the state of Macassar, that the European supremacy was undermined, and the power of the government of the Goa Macassars nearly destroyed altogether. In 1814, I saw them surrendered, with great pomp and ceremony, into the hands of the British authority, for the purpose of being restored to the Macassars. Day and night they were watched ; and at stated times fumigated and perfumed. The apartment in which

they were deposited was entered with more awe and solemnity than the people were wont to observe in approaching their temples. Many chiefs of high rank attended at the first presentation, who refused to be seated, as usual, on chairs, in the European fashion, because the regalia were borne by slaves, who squatted on the ground, and it would have been sacrilege in their eyes to have been seated higher than these objects of their veneration. The reader will feel some surprise when he hears an enumeration of some of the principal articles of the Macassar regalia. They consisted of such as the following :—The book of the laws of Goa, —the fragment of a small gold chain,—a pair of China earthenware dishes,—an *enchanted* stone, —a popgun,—some krises and spears,—and, above all, the *revered weapon*, called the *sudang*, a kind of hanger or cleaver ; the express object of which, according to the naked expression of the people themselves, was "*to rip open bellies !*"

Upon the subject of the superstitious attachment to relics, it may be remarked, as a singular fact, that among the Indian islanders it never takes, as in Europe, a religious form. The genius of Mahomedanism, to be sure, it may be said, is peculiarly averse to it ; but among a people so imperfectly converted, this would have been disregarded, had there existed any tendency in the society towards the worship of relics.

Among the weaknesses of the Indian islanders may be mentioned their fondness for external show and pomp, and the facility with which their judgment is carried away by a parade of them. Those concerned in governing them are aware of this, and external pomp and ceremony become important instruments of government. They are apt enough, indeed, to measure, at once, a man's greatness by the richness of his trappings and decorations, or the number of his retinue. Mr Marsden states, that the Sumatrans consider that we have degenerated from the virtues of our ancestors, because our men do not wear full-bottomed wigs and laced coats, nor our women hooped-petticoats and high head-dresses! *

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* Dampier gives a most accurate representation of this feature of the native character, in the following ludicrous anecdote: " Among the rest of our men that did use to dance thus before the general, there was one John Thacker, who was a seaman bred, and could neither write nor read, but had formerly learnt to dance in the music-houses about Wapping. This man came into the South Seas with Captain Harris, and getting with him a good quantity of gold, and being a pretty good husband of his share, had still some left, besides what he laid out in a very good suit of clothes. The general supposed, by his garb and his dancing, that he had been of noble extraction, and, to be satisfied of his quality, asked of one of our men, if he did not guess aright of him? The man of whom the general asked this question told him he was much in the right, and that most of our ship's company were

I am now to offer the reader a portrait of the vices of the Indian islanders, an invidious undertaking, but I shall endeavour to delineate it without extenuating or amplifying.

Revenge, the vice of all barbarians, is the most prominent in the character of the Indian islanders. They can hardly forgive an injury, and are capable of harbouring the longest and the deepest rooted resentment. In a state of society where there is no regular administration of justice, but where the security of every man's honour, life, and property, depends in no small degree upon his own arm, we may almost hesitate whether to pronounce the passion of revenge a virtue or a vice. Without it, at all events, society could not exist. All the tribes of the Archipelago, without exception, are tinctured more or less with this vice; but, as we may naturally suppose, its most baleful influ-

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of the like extraction, especially all those that had fine clothes; and that they came abroad only to see the world, having money enough to bear their expences wherever they came; but that for the rest, those that had but mean clothes, they were only common seamen. After this the general shewed a great deal of respect to all that had good clothes, but especially to John Thacker, till Captain Swan came to know the business, and marred all, undeceiving the general, and drubbing the nobleman; for he was so much incensed against John Thacker, that he could never endure him afterwards, though the poor fellow knew nothing of the matter."—*Dampier's Voyages*, p. 361, 362.

ence is felt among the most turbulent. It is most remarkably displayed in the character of the people of Celebes, and least so in that of the Javanese, whose government is most despotic, and whose character is necessarily most servile and tame.

The spirit of revenge, with an impatience of restraint, and a repugnance to submit to insult, more or less felt by all the Indian islanders, give rise to those acts of desperate excess which are well known in Europe under the name of *mucks*. * This peculiar form of exacting revenge, unknown to all other people, yet universal in the Indian islands, and recognized throughout by one and the same name, I strongly incline to suspect may at first have been of arbitrary institution, and have spread like other general customs by the influence of one great tribe. A muck means generally an act of desperation, in which the individual or individuals devote their lives, with few or no chances of success, for the gratification of their revenge. Sometimes it is confined to the individual who has offered the injury; at other times it is indiscriminate, and the enthusiast, with a total aberration of reason, assails alike the guilty and the innocent. On other occasions, again, the oppressor escapes, and the muck consists in the oppressed party's taking the lives of those

* This word has been naturalized in our own language. "To *run a muck*, signifies to run madly, and attack all that we meet."—*Johnson*. Pope appears to have given stamp and currency to it.

dearest to him, and then his own, that they and he may be freed from some insupportable oppression and cruelty. In the year 1812, the Bugis slave of a Creole Dutch woman at Surabaya in Java ran a muck of this last kind. His wife, who had been more particularly the object of the cruelty of the mistress, he first put to death, and after her his three children. With the youngest infant he rushed out into the street, holding the bloody axe with which he had perpetrated the first murders in his hand, and, in the presence of two English gentlemen, decapitated the infant, on which he threw the weapon from him into the neighbouring canal, and surrendered himself to the gentlemen, begging them to take his life. The Indian islanders apply the word muck to the charge of Europeans with the bayonet, but this arises from their associating it with the partial charges made now and then in their own mode of warfare, by a few devoted and insulated individuals, and which are real acts of desperation, in which the calculation of success is quite overbalanced by that of failure.

The most frequent mucks, by far, are those in which the desperado assails indiscriminately friend and foe, and in which, with dishevelled hair and frantic look, he murders or wounds all he meets without distinction, until he be himself killed,—falls exhausted by loss of blood,—or is secured by the application of certain forked instruments, with which experience has suggested the necessity of opposing

those who run a muck, and with which, therefore, the officers of police are always furnished. One of the most singular circumstances attending these acts of criminal desperation, is the apparently unpremeditated, and always the sudden and unexpected manner in which they are undertaken. The desperado discovers his intention neither by his gestures, his speech, nor his features, and the first warning is the drawing of the kris, the wild shout which accompanies it, and the commencement of the work of death. In 1814, a chief of Celebes surrendered himself to the British and a party of their allies headed by a chief. He was disarmed and placed under a guard, in a comfortable habitation, and the hostile chief kept him company during the night. His kris was lying on a table at a little distance from him. About 12 o'clock at night, while engaged in conversation, he suddenly started from his seat, ran to his kris, and having possessed himself of it, attempted to assassinate his companion, who, having superior strength, returned a mortal stab. The retainers of the prisoner, who were without, hearing what was going on within, attacked those of the friendly chief and the European centinels with great courage, and would have mastered them, had not the officer of the guard *

* My friend, Captain Alexander Macleod of the Bengal military service.

rushed out with his drawn sword, and overpowered those who were engaged with them. When he entered the apartment where the chiefs were, he found the captive chief expiring, leaning on the arm and supported by the knee of his opponent, who, with his drawn dagger over him, waited to give him, if necessary, an additional stab.

In the year 1812, the very day on which the fortified palace of the sultan of Java was stormed, a certain petty chief, a favourite of the dethroned sultan, was one of the first to come over to the conquerors, and was active, in the course of the day, in carrying into effect the successful measures pursued for the pacification of the country. At night he was, with many other Javanese, hospitably received into the spacious house of the chief of the Chinese, and appeared to be perfectly satisfied with the new order of things. The house was protected by a strong guard of Sepoys. At night, without any warning, but, starting from his sleep, he commenced havock, and, before he had lost his own life, killed and wounded a great number of persons, chiefly his countrymen, who were sleeping in the same apartment with him. I arrived at the spot a few seconds after this tragical affair, and found it, as is usual on such occasions, a very difficult matter to obtain a true account of an affair in its own nature sufficiently strange and unaccountable. It was only after a

time that the real circumstances as now narrated transpired.

Although we cannot always be sure when an attack of this nature is to be made, one thing we may be certain of, that whenever an Indian islander is placed, with arms in his hands, in a situation where he thinks his life or his honour in danger, the chances are, that he will devote himself to be avenged of those he deems his oppressors, totally regardless of all consequences. In our intercourse with them we must always be prepared for such a result, and the natives are themselves so fully aware of this feature of character, that the very first step taken with a prisoner, however trivial his offence, is to disarm him.

Another vice incident to such a state of society as that of the Indian islanders, is a disregard for human life. They live in a state of turbulence and anarchy; the empire of law is next to nothing; death is familiar to the people, and has few terrors for them, and the great body are in such a state of degradation, that they neither value the lives of each other, nor are those lives likely to be valued by their chiefs, who despise them in every thing else. The exercise of the right of private revenge, and the law which acknowledges it, demand life for life, but both accept a pecuniary commutation; so that every man's life has its price, and that, too, not a very high one. Murders and as-

sassinations are frequent, therefore, in every country of the Archipelago. A hired assassin may be had in Java for twenty shillings Sterling, provided the person to be assassinated be a plebeian, but hardly any consideration will obtain one to assassinate a chief. I do not mean to assert that the abominable and cowardly practice of employing hired desperados is frequent in any country of the Archipelago. A man generally takes vengeance with his own hand, but should he choose the less dangerous course, he will find those who are not reluctant to be employed. In the year 1812, when I was Resident at the court of the Sultan, a Chinese hired a Javanese to assassinate another Javanese who had offended him. The agent perpetrated the murder, and claimed his reward,—as far as I remember, about fifteen shillings. The Chinese refused payment. The matter having sometime afterwards come to light, the Chinese absconded, and the Javanese having been apprehended, made, in my presence, according to the frequent custom of his countrymen, a full confession of every circumstance.

Perfidy and faithlessness are vices of the Indian islanders, and those vices of which they have been most frequently accused by strangers. This sentence against them must, however, be understood with some allowances. In their domestic and social intercourse, they are far from being a deceitful people, but in reality possess more integrity than it is rea-

sonable to look for with so much misgovernment and barbarity. It is in their intercourse with strangers, and with enemies, that, like other barbarians, the treachery of their character is displayed. In these relations, good faith and integrity of conduct are known only where good government and civilization prevail, and, where they are absent, we are sure to have the opposite vices. Of all the people of the East with whom Europeans have had an extensive commercial intercourse, the Indian islanders are by far the most uncivilized and barbarous. The singular value of the products of their country, and the peculiar convenience of the countries they inhabit for commerce, have given birth to an extensiveness of intercourse almost incompatible with their state of civilization. Those acts of piracy, and other lawless attacks on the property of strangers, insidiously perpetrated in accordance with the spirit of the aggressions of all people in such a state of society, are the results. Among a hundred nations of independent barbarians, the plunder of the stranger and traveller are no more looked upon as crimes, than among the tribes of the deserts of Arabia; as, among the latter, the same stranger, forlorn and destitute, would find an hospitable reception.

In their social and domestic state, thefts and robberies are extremely frequent, yet it would not

be just to pronounce the Indian islanders a people of a thievish disposition. These crimes are perpetrated, in general, only by the meanest and most abandoned of the people; and even the common peasantry are remarkable more generally for honesty and fidelity than the opposite vices.

Having furnished this general picture of the character of the Indian islanders, I shall now consider their conduct and manners as they are more particularly displayed in their domestic and social converse.

The most prominent of the domestic relations respects the condition of women. The institution of marriage, I need hardly observe, is an universal ordinance of the Indian islanders; and the lot of women may, on the whole, be considered as more fortunate than in any other country of the east. In general, they are not immured at all, and when they are secluded, it is but partially, and not with that jealous restraint which has become proverbial with respect to the manners of the east. The husband invariably pays *a price* for his wife among all the tribes; but notwithstanding, women are not treated with contempt or disdain. They eat with the men, and associate with them in all respects on terms of such equality, as surprise us in such a condition of society. This equality between the sexes, it is remarkable enough, is perhaps most thoroughly recognized among the most warlike

tribes. Among the nations of Celebes, the most warlike of the Archipelago, the women appear in public without any scandal; they take an active concern in all the business of life; they are consulted by the men on all public affairs, and frequently raised to the throne, and that too when the monarchy is elective. Here the woman eats with her husband, nay, by a custom which points at the equality of the sexes, always from the very same dish, the only distinction left to the latter being that of eating from *the right side*. At public festivals, women appear among the men; and those invested with authority sit in their counsels when affairs of state are discussed, possessing, it is often alleged, even more than their due share in the deliberations.

The present sovereign of the Bugis state of Lawu, in Celebes, is wife to the king of Sopeng, another Bugis state, but the king of Sopeng does not presume to interfere in the affairs of the state of Lawu, which are administered by his wife, its own proper queen. The wife of the respectable Macassar chief, *Kraing Lembang Parang*, is sovereign of the little state of *Lipukasi*, and has the reputation of being one of the first politicians of Celebes. I saw this renowned lady at Macassar in 1814. She appeared to be about fifty years of age, and had all the appearance of intelligence and resolution. Not many days before I saw her, she had

presented herself among the warriors of her party drawn out before the enemy, upbraided them for their tardiness in the attack, in lofty terms, and demanded a spear, that she might show them an example. Encouraged by her exhortations, it appears they went forth, and gained an advantage.

Celebes is not the only country of the Archipelago in which women are raised to sovereign authority. There is hardly a country of it in which women have not at one period or another of their history sat on the throne; and it may be remarked, that the practice is most frequent where the government is most turbulent.

In Java, the rank of women is not so distinguished as in Celebes, but they are treated, notwithstanding, with much consideration,—without coarseness, brutality, or neglect; and mal-treatment, to the extent of personal violence, is equally unknown to the Javanese, and all the other tribes. The Javanese women are industrious and laborious beyond those of all the Archipelago, but their labour, instead of being a slavery imposed upon them by the men, becomes, through its utility to the latter, a source of distinction. Their faculties, indeed, exercised in the various branches of domestic and agricultural economy, in which they are so often employed, places their understandings on many points above those of

the men. The seclusion of women in Java takes place only among the better classes, but even with them it is not very rigid. They are rather withdrawn from the public gaze, and from the stare of strangers, than immured. British gentlemen, after they became known to the native princes, were always admitted into their harams to pay their respects to the princesses. The wife and daughters of the chief of Samarang made their appearance at the public parties given by the British and the Dutch, where they acquitted themselves with a delicacy and propriety which did honour to their high rank. The respectable chieftain himself, it may be remarked, was the most punctilious Mahomedan, on essential points, of all his countrymen.

It is only where the greatest intercourse has taken place with foreigners, and where the Arabs and western Indians have left an impression of their peculiar habits, that women are in any considerable degree immured, as among the greater number of the Malay tribes.

Polygamy and concubinage are tolerated in every country of the Archipelago, that is, they exist among a few of the higher ranks, and may be looked upon as a kind of vicious luxury of the great, for it would be absurd to imagine, since the prejudice which supposed a numerical disproportion of the sexes has been long ago abandoned, that po-

lygamy or concubinage should be an institution affecting the whole mass of society. It must be admitted, however, that their prevalence among the higher orders, those whose manners give an example to the society, must contribute to degrade and vitiate the female character. In the circumstances under which the intercourse takes place, there are some which conduce to mitigate its influence even in this respect. The wife of the first marriage is always the real mistress of the family, and the rest often little better than her handmaids. No man will give his daughter for a second or third wife to a man of his own rank, so that, generally, no wife but the first is of equal rank with the husband.*

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* The following picture of the condition of women among the tribes of the Archipelago is given by an excellent authority:—"They did never stir out of their own room when the general was at home, but as soon as he was gone out, they would presently come into our room, and sit with us all day, and ask a thousand questions of us concerning our English women, and our customs. You may imagine that before this time, some of us had attained so much of their language as to understand them, and give answers to their demands. I remember that one day they asked how many wives the king of England had? We told them but one, and that our English laws did not allow of any more. They said it was a strange custom that a man should be confined to one woman; some of them said it was a very bad law, but others again said it

It is on the subject of female chastity of all others, that there is the greatest disparity in the manners of the Indian islanders among themselves. Among the people of Sumatra, among the Malayan states, in Borneo and the Peninsula, and among the people of Bali and Celebes, a nice regard to female virtue prevails. In Java alone, there is a very general laxity, and frequently a great dissolution of morals, on this point. In all the countries of the Archipelago, divorces may, by law or custom, be readily obtained. But, in all but Java, they are very seldom sued for; in Java there is a very wantonness

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was a good law; so there was a great dispute among them about it. But one of the general's women said positively, that our law was better than theirs, and made them all silent by the reason which she gave for it. This was the war queen, as we called her, for she did always accompany the general whenever he was called out to engage his enemies, but the rest did not.

"By this familiarity among the women, and by often discoursing with them, we came to be acquainted with their customs and privileges. The general lies with his wives by turns, but she by whom he had the first son has a double portion of his company; for when it comes to her turn, she has him two nights, whereas the rest have him but one. She with whom he is to lie at night, seems to have a particular respect shewn her by the rest all the precedent day; and, for a mark of distinction, wears a striped silk handkerchief about her neck, by which we knew who was queen that day."—*Dampier's Voyages*, Vol. I. p. 367, 368.

on this point, which in some cases is hardly short of absolute prostitution. The caprice which gives rise to them most frequently originates with the women. It is not unfrequent to see a woman who, before she is thirty, has divorced three or four husbands; I remember one case being pointed out to me of a woman, who, at the moment, was living with her twelfth mate. In Java food is abundant, and the women being laborious, careful, and industrious, can earn a subsistence independent of the men, while the latter are infinitely more tame and servile than any other people of the Archipelago. Does this state of things, and the absence of good morals and education to counteract it, give rise to the singular libertinism of the Javanese women?

In the intercourse of the sexes the greatest dissolution of morals prevails among the higher ranks, and chiefly in the great native towns of Java. In these circumstances intrigues are frequent, and some ladies of the very highest rank have been known to have their paramours almost publicly, and often with the connivance of the husband.

Jealousy of their females cannot well be said to be a vice of the character of any of the Indian islanders. This is shown satisfactorily in the publicity allowed to the women,—in the men rendering them the subjects of conversation,—and in direct contradiction to the practice of the nations of con-

tinental India, considering complimentary inquiries after them as not insulting, but courteous. Although, however, they are not jealous of their women, they are jealous of their own honour in *their* persons, and ready to avenge, at the risk of their lives, the slightest insult offered to them. In the year 1718, the prince of Madura, having been driven from his throne by his rebellious brother, resolved to throw himself on the protection of the Dutch, and for this purpose came, with his family, on board of a Dutch frigate lying in the harbour of Surabaya. The Dutch captain received him with courtesy, and as his princess came on deck, took the liberty, with more freedom than delicacy, of embracing her by kissing her neck, a practice perhaps authorized by the then manners of his country, but hostile, past endurance, to oriental fastidiousness. The princess, imagining her honour in danger, screamed aloud, and the prince, rushing upon the commander, poignarded him on the spot. His followers commenced a muck; the crew of the ship retaliated, and being eventually successful, put the prince and many of his people to death, and decapitated and sent the head of the former to Surabaya. These particulars are faithfully extracted from the native annals.

Instances of the same kind have occurred among the Javanese, but they are, as we might suspect,

far less scrupulous than the rest, as the following anecdote, extracted from Javanese writings, will show. In the year 1706, the Susunan Pakubuwana being at Samarang, and having gained some advantages over his rival, gave public dances and entertainments, at which the wives and daughters of the chiefs attended. The men of highest rank danced, according to the custom of their country, and the heir-apparent, who was a skilful performer, exhibited with the rest. The beautiful wife of Martoyudo, son of the chief of Samarang, saw him, was charmed with his person, and struck with an irresistible passion for him, which she soon found means to communicate. The young prince in consequence visited the lady, and was in the habit of passing the night with her when the husband was absent on the public guard. One morning, the prince staying later than usual, the husband returned and found the lovers together. He discovered the rank of his wife's paramour, and, discreetly coughing, gave the prince an opportunity to escape. The offended husband contented himself with giving his wife *a drubbing*. She effected her escape, and complained of his *cruelty* to the Susunan, who being made acquainted with the transaction, and feeling the delicate nature of his own situation, at the moment contending for a crown, sent for the injured husband, and, presenting him with valuable gifts, requested him farther to select for a wife the handsomest

female of his own family, in reparation for the injury he had received. The prudent husband was satisfied with the valuable consideration he obtained in the way of gifts, and was content to take back his faithless spouse!

Of the second capital relation of domestic life, the union between parent and child, it is marked among the civilized portion of the Indian islanders by tenderness and affection on one side, and obedience and respect on the other. Parental authority is exercised to the latest periods of life, and filial duty willingly returned. I do not think I ever heard of an instance of cruelty on the one side, or of insolence or neglect on the other. They themselves consider a father and child as almost inseparable, and when the one is punished the other seldom escapes. In the year 1811, the sultan of Java put to death his prime minister, and shortly after, without alleging any offence, his aged father, though he held no public employment, and was altogether unconnected with any state affair. The elder son, and heir-apparent of the same chief, having incurred his displeasure, he degraded the prince's mother, the senior queen, to the lowest rank of his wives, and when still farther offended with the son, he imprisoned her. When the young prince just alluded to came to the throne, he placed his mother far above his own queens in rank and authority, and treated her, as I was often witness to, with a filial piety the most exemplary. When the sons of the respectable

chief of Samarang returned from Calcutta, he told me that he thought the eldest somewhat deficient in respect to him, on which he admonished him, in terms that made such an impression on the youth, that he had never afterwards cause to be dissatisfied with him. It is, indeed, in the relation between parent and child, that the character of the Indian islanders appears most unexceptionable and most amiable.

Fraternal affection, particularly between children of the same mother, is warm and active. The history of Java does not present those frequent contests between brothers for power, which are so often presented in the histories of the western countries of Asia. When they do occur, the person whose want of success decides him to be the rebel, is found to be almost always pardoned, when his accomplices forfeit their lives. In the year 1645, in the reign of the sultan Tagalarum, the very worst of a long line of bad princes, his brother Pangeran Alit revolted against him, and was slain in a tumult. The sultan feigned the deepest sorrow on the occasion, and, as an expiation, wounded himself in the arm. This conduct on his part, barbarous and extravagant as it may seem, may be considered as a concession to public opinion. —Batara Toja was elected queen of Boni in 1714, and from affection yielded the crown to her brother. This unworthy person was deposed, and she was a second time chosen, and a second time she yielded the crown to another brother.

Friendship, or the state of minds united by mutual benevolence, is a relation or virtue unknown to the Indian islanders. I am not aware, indeed, that any one of their languages has a native word to express it. Their beneficence seldom extends beyond the narrow circle of their own relations and families. The attachment of a chief to his retainers is, however, often strong, and the retainers return it with double interest, and frequently display much fidelity and devotedness.

To their society or tribe the more improved nations of the Archipelago show a degree of fondness which may be favourably contrasted with the unworthy apathy in this respect of the nations of Hindustan. They are jealous in a considerable degree of the independence of their country, yet they are not heard to speak with enthusiasm on the subject, and probably would not make any considerable sacrifice in its cause. It would, therefore, be going a good deal too far, to bestow on the sentiment they feel the respectable name of patriotism.

To the spot of their birth they feel the fondest attachment. This passion is strongest with the agricultural tribes, from their more settled and less adventurous habits. The Javanese can hardly be persuaded, for any ambitious prospect, to quit the tombs of their fathers, and to remove them under any other circumstance, is literally tearing them from the soil.

CHAPTER III.

DOMESTIC CEREMONIES AND FAMILIAR USAGES.

Marriages.—Period of contracting marriages.—Courtship.—Different descriptions of marriage.—Betrothing.—Payment of a price for the wife.—Marriage ceremony.—Consummation.—Ceremonies at births.—Bestowing of names.—Circumcision.—Funeral ceremonies.—Appearance of burying-grounds.—Pious attachment of the natives to them.—Worship of ancestors.—Exterior manners of the Indian islanders.—Peculiarities in this respect.—Modes of address and salutation.—Observances at meals.—Practice of chewing the betel and areca preparation.—Practice of using tobacco.—Use of fermented liquors.—Use of opium.

In this Chapter I shall endeavour to furnish the reader with a sketch of the domestic and familiar institutions and usages of the Indian islanders. Upon all these subjects, the variation among them is far less surprising than the agreement; for, even in matters apparently of arbitrary institution, a singular uniformity is discoverable. I shall, as on other occasions, hold the manners of the Javanese chiefly in view, taking care, as I proceed, to remark such important varieties or differences as the manners of other tribes may exhibit.

I shall commence with the ceremonies connect-

ed with marriage, considered by the natives themselves to be such important concerns of life. Marriages are seldom, if ever, consummated until the age of puberty with the women, and not for two or three years after it by the men. To marry their daughters about that age is a point of honour with parents, for obvious reasons, in a country where inclination is not restrained by the discipline of education and morals. At the age of eighteen or twenty, a woman in Java is called an old maid, and an *old maid* is a suspected thing among the Javanese. No age, however, excludes a woman from the chance of a husband; if she cannot, at the usual age, make an eligible match, she will be sure in time to make some match or other; so that I never saw a woman of two and twenty that was not or had not been married. Prudential motives often induce the men to delay marriage even as late as the age of five and twenty. Widows marry at any age, even to fifty; but they marry men of corresponding ages with themselves; widowers do the same thing; so that among the Indian islanders one seldom sees any of those discordant matches, from disparity of ages, that frequently occur in other countries of the east. Examples are even afforded of unions where the husband is younger than the wife, and those where the ages are equal are sufficiently common. The present sultan of Java, at whose nuptials I was

present, was married to his own cousin, a very pretty and interesting young woman, three years older than himself.

The courtship, if it deserve the name, is conducted, not by the parties themselves, but by their parents. Their youth, and the state of morals, generally render this necessary. The slightest interference of the young people themselves would indeed be deemed matter of the utmost scandal. Conversing with an old chief on this subject, he told me that the bridegroom and bride were looked upon, in his phrase, *as puppets in the performance.* *

Marriages are of three kinds. The first, which

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* "But little apparent courtship precedes their marriages. Their manners do not admit of it; the *bujang* and *gadis* (youth of each sex) being carefully kept asunder, and the latter seldom trusted from under the wing of their mothers Besides, courtship, with us, includes the idea of humble entreaty on the man's side, and favour and condescension on the part of the woman, who bestows person and property for love. The Sumatran, on the contrary, when he fixes his choice, and pays all that he is worth, for the object of it, may naturally consider the obligation on his side. But still they are not without gallantry. They preserve a degree of delicacy and respect towards the sex, which might justify their retorting on many of the polished nations of antiquity, the epithet of barbarians. The opportunities which the young people have of seeing and conversing with each other, are at the *bimbangs* or public festivals, held at the *balei*, or town-hall of the *dusun*. On these occasions, the unmarried people meet together, and dance and sing in company. It

is the most usual, takes place when the rank of the parties is equal, or that of the husband is superior to that of the bride; the second, when the rank of the wife is much superior to that of the husband, and he is adopted into his father-in-law's family; and the third is a kind of imperfect marriage, or concubinage, which legitimizes the offspring, without placing them upon an entire equality with those of the higher descriptions of marriage. There are no persons, indeed, stigmatized by the name of bastards, in the state of society which exists in the Indian isles.

In the two first descriptions of marriage, there is no difference in *the ceremony*, and in the last, there is no ceremony at all, the marriage consisting in the mere repute of the parties living together.

In the regular marriages, the parties are always betrothed to each other for a longer or shorter time, sometimes not for more than a month, and at others for a period of years. I shall describe the marriage ceremony of the Javanese in detail,

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may be supposed that the young ladies cannot be long without their particular admirers. The men, when determined in their regards, generally employ an old woman as their agent, by whom they make known their sentiments, and send presents to the female of their choice. The parents then interfere, and the preliminaries being settled, a *bimbang* takes place."—*Marsden's Sumatra*, pp. 265, 266.

as an example of those of the other tribes, which differ very little from it.

The father of the young man, when he imagines he has found a suitable match for his son, waits upon the father of the young woman, and makes proposals. A negociation commences, chiefly conducted by the women, which, if successful, terminates in *the betrothing;* and a trifling gift is presented by the future bridegroom, in earnest of the engagement. Among the Javanese, it is usually a ring, or piece of cloth; and the ceremony is denominated the *paningsat*, or *binding*. The *earnest* delivered by the Malays is a quantity of prepared areca, which gives name to the ceremony.*

The second portion of the ceremony consists in the family and friends of the bridegroom paying a visit at the house of the bride's father, and presenting fruits and viands. The object of this ceremony, which the Javanese term *lamaran*, is to give publicity to the intended nuptials.

In the common marriages of the Indian islanders, *a price* is universally paid by the husband for his wife; and the third branch of the Javanese marriage ceremonies has reference to the arrangements for this important business, which are made the night before the nuptials. The gifts consist, according to the circumstances of the parties, of

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* The word is *pinang*, from whence we have the verb *măminang*, to betroth.

money, jewels, cloths, kine, buffalos, rice, &c. In the common language of Java, the nature of the transaction is plainly enough implied in its name, *patukon*, or the *purchase-money*, which, however, with some regard to delicacy, is occasionally called *srahan*, or *the deposit*. Among some tribes, the money or goods go to the parents of the young woman, without limitation; but in Java they are generally looked upon as a settlement or provision for the wife.

The only portion of Mahomedanism in the whole ceremony consists in the bridegroom's appearing at the mosque on the forenoon of the marriage day, with his father-in-law, when engaging for the *mas kawin*, a trifling sum prescribed by the Mahomedan law; he is then married, and takes the vows according to the Mussulman ritual of marriage. This last is a concession to their present form of worship; the rest is entirely native.

All the native ceremonies are solemnized at the house of the bride's father, and not at that of the bridegroom's father. In some parts of the island of Java, so much deference is paid to the bride's inclinations, that if it be demanded, the husband, if of a different village or district, must come and reside in the village of his spouse. When I was Resident of Surabaya, in 1815, a peasant came into the Court of Justice, claiming that his wife, a young girl whom he had just married, might be

ordered to come home to him, and reside in his village. Nothing appeared more reasonable. The parties appeared personally in court; and the lady was inflexible in her determination to continue in her own village. An old man was examined upon the custom of the country, which he explained in favour of the claims of the wife, observing, in an illustration quite characteristic of the manners of the people: "It is not the wild heifer that goes in quest of the wild bull, but the bull that goes in quest of the heifer!"

With respect to the details of ceremonials, they differ not only in every country of the Archipelago, but in almost every district of the same country. In Java, suffice it to say, that they consist of public processions, in which the bride and bridegroom, with their friends, parade the country, village, or town,—attended by music,—decorated in their gayest attire,—and decked with the borrowed jewels of the best part of the neighbourhood. As much of the parade as possible is equestrian, and the bridegroom is always mounted. The bride is conducted in a kind of open litter.

In the marriage ceremonies of persons of rank, a person dressed as a buffoon or satyr precedes the procession, exhibiting strange and fantastic gestures. At the marriage of the young sultan of Java, already alluded to, this ridiculous object pre-

sented itself at the most solemn and affecting part of the ceremony.

When the parties finally meet at the house of the bride's father, the bride rises to receive her lover; he conducts her by the hand to a distinguished seat, prepared for the occasion, where, as a pledge or token of sharing his future fortunes with her, he presents her with a little rice, and they eat from the same vessel. This exactly corresponds with the Roman confarreation. In some parts of Java, the bride, in token of *subjection*, washes the feet of the bridegroom; and in others, for the same reason, he treads upon a raw egg, and she wipes his foot.

Petty deviations of this sort are numerous, but, generally, not worth noticing. One practice, dictated by superstition, as it illustrates the character of the people, may, however, be particularized. In some parts of Java, when a man marries a second or third wife he is made to advance with an ignited brand in his hand, on which the bride pours water from a vase, to extinguish it. A Javanese informed me that he was present at one of these marriages, and that the bride, a widow, tired of the operation of pouring the water on the brand, discharged the vessel and its contents full in her lover's face.*

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* Eadem nocte, quâ ceremoniae hae fiunt, matrimonium consummatum est. Inter tribus omnes, res aestimationi atti-

On the day after the marriage, the bridegroom takes his wife home to his father's house, where a great feast is given to the friends and relations of both parties.

The endless variety of ceremonies *at births* it would little interest the reader to repeat, and the detail would afford him no insight into the character of the people. When a woman quickens of her first child, this is the occasion of a festival; when the seventh month of her pregnancy is successfully passed, this is one for another; when the umbilical cord drops off, this is the occasion of a third. It is on this last that the child receives a name; but they have no solemnity corresponding to our baptism. A native, accustomed to our manners, told me that they bestowed names upon their children with as little ceremony as we did upon our dogs or horses! Those who have a smattering of

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nens putatur, ut sponsa, quam maxime potest, resisteret; ac ne uxor ipsa quidem, sed etiam consanguinei sui, pertinaciâ quâ contentio haec sustineatur, gaudent. Matres Madurenses, annulis acutis filias suas hâc causâ donant, ac sponsi vultus matutinus signa saepe offert, quomodo haec arma usa fuerint. Sponsus, ex altera parte, atque amici sui, felicem ac citum hujus pugnae eventum, sicut triumphum, celebrant. Me ipso apud Yugyakartam remanente, successus talis in cubili regio, tormentorum bellicorum displosioni, cognatis suis divulgatus fuit.

Arabic, and make pretence to superior piety, give Arabic names to their children. This is common with the Malayan tribes. The Javanese content themselves with native names. The love of progeny with all is declared in the frequency of the practice among the lower orders, throughout the different countries of the Archipelago, of the father and mother dropping their own names as soon as their first child, particularly if a boy, is born. If the child, for example, be called, as is frequent enough, by such names as " the Handsome One," or " the Weak One," &c. the parents will be called the " father and mother of the handsome one, or the father and mother of the weak one," &c.

The names bestowed among the Indian islanders may frequently be considered as *titles*, and are changed at every promotion of one's state or circumstances.

From the age of eight to twelve years, the ceremony of circumcision is performed on the male children, and in Java, I do not know whether the custom be general, a corresponding ceremony is observed in regard to the young women. *

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* " They circumcise the males at eleven or twelve years of age, or older; and many are circumcised at once. This ceremony is performed with a great deal of solemnity. There had been no circumcision for some years before our being here; and then there was one for Raja Laut's son. They chuse to

The *funerals* of the Indian islanders who are Mahomedans are conducted with a decent solemnity, usually without clamour and without ostentation. When a person dies in the evening, the body is kept until the following morning, but if he die whilst the sun is up, it is usually interred the same day. The observances of the funeral are almost purely Mohamedan. The body, after the customary ablutions, is wrapped in white cloth, and without a coffin deposited in the grave. A simple mound of earth, and a temporary wooden frame, mark the place of interment; it is seldom that the grave is covered by a stone, and still rarer that there is any inscription. In Java there is a beauty and simplicity in the native burying grounds, which will not fail to attract the notice of a person of good taste. They are generally in a romantic spot, particularly a hill, at some distance from the village, and consist of

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have a general circumcision, when the sultan or general, or some other great person, hath a son fit to be circumcised; for with him a great many more are circumcised. There is notice given about eight or ten days before for all men to appear in arms, and great preparation is made against the solemn day. In the morning before the boys are circumcised, presents are sent to the father of the child, that keeps the feast; which, as I said before, is either the sultan, or some great person; and about ten or eleven o'clock the Mahomedan priest does his office. He takes hold of the foreskin with two sticks, and with a pair of scissors snips it off."—*Dampier's Voyages*, Vol. I. p. 339.

groves of the *samboja* tree, a plant which, even when young, from the fantastic growth of its stem, has a venerable and solemn aspect. * The little mounds of earth at the foot of each tree alone point

* " At their funerals, the corpse is carried to the place of interment on a broad plank, which is kept for the public service of the *dusun*, and lasts for many generations. It is constantly rubbed with lime, either to preserve it from decay, or to keep it pure. No coffin is made use of; the body being simply wrapped in white cloth, particularly of the sort called *hummums*. In forming the grave, *(kubur,)* after digging to a convenient depth, they make a cavity in the side, at bottom, of sufficient dimensions to contain the body, which is there deposited on its right side. By this mode the earth literally lies light upon it; and the cavity, after strewing flowers in it, they stop up by two boards, fastened angularly to each other, so that the one is on the top of the corpse, whilst the other defends it on the open side; the edge resting on the bottom of the grave. The outer excavation is then filled up with earth; and little white flags, or streamers, are stuck in order around. They likewise plant a shrub, bearing a white flower, called *kumbangkamboja*, (Plumera obtusa,) and in some places wild marjoram. The women who attend the funeral make a hideous noise, not much unlike the Irish howl. On the third and seventh day, the relations perform a ceremony at the grave, and at the end of twelve months, that of *tegga batu*, or setting up a few long elliptical stones, at the head and foot; which, being scarce in some parts of the country, bear a considerable price. On this occasion, they kill and feast on a buffalo, and leave the head to decay on the spot, as a token of the honour they have done to the deceased, in eating to his memory. The ancient burying-places are called *krammat*, and are supposed to have been those of the holy men by

out where the "rude forefathers of the hamlet sleep."

Among the many customs common to the Indian islanders, there is none more universal than the veneration for the tombs of ancestors. When the Javanese peasant claims to be allowed to cultivate the fields occupied by his forefathers, his chief argument always is, that near them are the tombs of his progenitors. A Javanese, as I have remarked in another place, cannot endure to be removed from these objects of his reverence and affection; and when he is taken ill at a distance, begs to be carried home, at all the hazards of the journey, that he may "sleep with his fathers." The bodies of some of the princes who died in banishment at Ceylon, I perceive, were, at their dying request, conveyed to their native island.

In Java, conformably to this feeling, there is an annual festival on the eighth of the month of Shawal, held in honour of ancestors. On this occasion, the men, women, and children, dressed in their decentest attire, repair to the burying grounds, and pass the day in devotion, each family strewing the tombs of its progenitors with the flower of the

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whom their ancestors were converted to the faith. They are held in extraordinary reverence, and the least disturbance or violation of the ground, though all traces of the graves be obliterated, is regarded as an unpardonable sacrilege."—*Marsden's Sumatra*, pp. 287, 288.

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sălasi or Indian *tulsi*, a plant cultivated in considerable quantity for this express occasion.

In *exterior manner*, the most accomplished and courtly of the Indian islanders fall far short of that ease and elegance of address which is so general with the natives of Persia and Hindustan, and which, however hollow and insincere, must excite some share of our admiration. There is a sort of rigid awkwardness in all their forms of address, particularly if compared to the supple graces which distinguish the manners of the natives of Hindustan. It will be almost unnecessary to dwell upon those particulars in their external demeanour, in which they agree with other orientals. It is respectful to cover the head, instead of uncovering it as among us. It is respectful to sit instead of standing. It is the very highest degree of respect to turn one's back upon a superior, and often presumption to confront him. It is the custom to sit cross-legged and on the ground. When an inferior addresses a superior, his obeisance consists in raising his hands, with the palms joined before his face, until the thumbs touch the nose. This he repeats at the end of every sentence, and if very courtly, at the conclusion even of each clause. When equals meet, their salutation is cold and distant, but in the ordinary intercourse of life, a relative superiority or inferiority of condition is usually confessed, and a demonstration of it con-

stantly takes place. If a son has been long absent from his father, he throws himself at his feet and kisses them. A demonstration of affection, less profound, would extend the embrace only to the knee, but a very obsequious courtier will sometimes take his monarch's foot and place it on his head. The association between loftiness and humility of manner, and physical superiority and inferiority, appears to be constantly present to their minds. An inferior never stands *upright* before a superior. If he stand at all, the body is always bent; if he sit, it is the same thing, and his eyes are fixed to the ground. When he advances and retires, he moves as if on all-fours, and crawls or creeps rather than walks. There is one mode of demonstrating affection and respect, particularly nauseous and indelicate. It consists in the superior's offering to the inferior the chewed refuse of the betel and areca preparation as a mark of great affection, which the latter swallows with much satisfaction. *

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* "The king is poor, proud, and beggarly; he never fails of visiting stranger merchants at their coming to his port, and then, according to custom, he must have a present. When the stranger returns the visit, or has any business with him, he must make him a present, otherwise he thinks due respect is not paid to him, and in return of these presents, his majesty will honour the stranger with a seat near his saered person, and will chew a little betel, and put it out of his royal mouth on a little gold saucer, and sends it by his page to the

The salutation by *touching the lips* is wholly unknown to the Indian islanders. The parallel ceremony with them both expresses and implies *to smell.* This is universal among all the tribes. The same term always expresses, in every language, the action of smelling, and this singular mode of salutation. The head and neck are the usual objects of the embrace, the performance of which is always accompanied by an audible effort, corresponding with its literal import.

At meals, not much delicacy of manner is observed by the Indian islanders. The direct gratification of the appetite, without much regard to the manner, is the principal object everywhere, indeed, out of modern Europe, where alone refinement and sentiment attempt to throw a veil of decorum over every indulgence of mere sensual appetite. Like other orientals, the Indian islanders squat down, and eat on the ground, or on covers little above its level. The naked hand alone is used to convey the food to the mouth, which, consisting of rice of an adhesive character, which is readily wrought into a ball, and of fish, or other animal food, cut into little fragments, renders superfluous either knife, fork, or spoon. Ablutions

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stranger, who must take it with all the signs of humility and satisfaction, and chew it after him, and it is very dangerous to refuse the royal morsel."—*Hamilton's New Account of the East Indies*, Vol. II. p. 72.

are carefully performed both before and after meals. *

As connected with the domestic manners of the Indian islanders, reference requires to be made to the peculiar forms among them of using intoxicating or narcotic drugs.

The most important of the practices connected with this subject, is that of chewing the prepared areca and betel, † so wide-spread and universal. This is one of those customs of arbitrary institution which, in all probability, originated with one tribe, and from them was disseminated among the rest. The names of both plants are nearly the same in every language of the Archipelago, and they are both indigenous. It is more likely, indeed, that the use of the areca, the leading ingredient, like that of the clove and nutmeg, was communicated from the people of the Archipelago to

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* "They use no spoons to eat their rice, but every man takes a handful out of the platter, and by wetting his hand in water, that it may not stick to his hand, squeezes it into a lump, as hard as possibly he can make it, and then crams it into his mouth. They all strive to make these lumps as big as their mouths can receive them, and seem to vie with each other, and glory in taking in the biggest lump, so that sometimes they almost choak themselves."—*Dampier's Voyages*, Vol. I. p. 329.

† The words *areka* and *betelé*, almost naturalized in our own language, belong originally, I believe, to the Telinga.

the neighbouring nations, than that it was introduced among them by foreigners. In confirmation of this, it may be observed, that among the Asiatic nations, the use of the preparation diminishes in frequency as we recede from the Archipelago, and that the neighbouring nations are to this day supplied with a great share of their consumption of the drug from that country. The wide extent of the practice of chewing the betel will surprise no one who considers the universal fascination of narcotic drugs, and who adverts, in confirmation of it, to the *wonderful* history of the dissemination of the tobacco plant.

The whole preparation consists, as is pretty well known, of the pungent and aromatic leaf of a species of pepper vine, which grows luxuriantly, and with little care, in the Indian islands, a fact which implies that it is indigenous; a small quantity of terra japonica, an agreeable bitter astringent; a minute proportion of quicklime; and, above all, the fruit of the areca palm, which, in one or two of the languages, we find distinguished by the name of "the fruit." This last is gently narcotic, and hence, I imagine, the charm which renders the whole preparation so bewitching to those who use it. Persons of all ranks, from the prince to the peasant, are unceasingly masticating it, and seem to derive a solace from it which we can scarce under-

stand, and which they cannot explain. * When the preparation, through mastication, is mixed with the saliva, the latter assumes a dirty brownish red, which colours the teeth, gums, and lips, leaving, as it dries upon the latter, a black-coloured margin. These nauseous particulars are, to the surprise of strangers, considered a beauty, such is the effect of custom. No mouth is thought handsome that is not engaged in chewing the betel, and in their poetry a lover is often described comparing that of his mistress to the fissure in a ripe pomegranate, the aptness of the simile consisting in the comparison of the stained teeth to the red grains of the fruit, and of the black stain on the lips to the hue which the broken and astringent rind assumes on exposure to the air.

In common with the rest of mankind, the Indian islanders have adopted the use of tobacco. The *one name* by which it is recognized in all the languages of the Archipelago, and that the American, or rather the European, points out from what

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* "They are always chewing *arecca*, a certain fruit, like a pear cut in quarters, and rolled up in leaves of a tree called *bettre*, (or *vetell*,) like bay leaves; which having chewed, they spit forth. It makes the mouth red. They say they do it to comfort the heart, nor could live without it."—*Pigafetta in Purchas*, Book ii. p. 38.

source it was derived.* The practice of smoking it was introduced in Java about the year 1601, according to the Javanese annals, only forty years after its first introduction into the southern countries of Europe, and but fifteen years after its introduction into England. Most probably it was introduced by the Dutch, who came to Java but five years before. Had the Portuguese taught the natives the use of it, the era of its introduction would have been earlier, from whence we may infer, that the use of it, at an early period, was not common among that people themselves.†

The fascination by which all mankind are led to the consumption of this plant, is no doubt owing to its agreeable narcotic qualities; but these qualities, however alluring, would never have led to the general use of it, "from China to Peru," had it not been *the only* agreeable narcotic which may be said to grow, and to grow with little care or trouble, in every climate, the circumstance alone which could render it cheap enough to be consumed by all mankind. Could the tea plant have been

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* The term by which the plant is known to the Javanese, in the factitious language of ceremony, is somewhat whimsical. It is *soto*, which also means a game-cock. This points at the estimation in which both the plant and animal are held.

† Neither Pigafetta, Drake, nor Cavendish, make mention of the use of tobacco among the Indian islanders.

so cultivated, we should certainly have found the use of it not less universal.

The practice of *smoking* tobacco, first tried, has been generally discontinued, and the Indian islanders now use it in a peculiar manner. The tobacco is finely shred, and a portion of it, in this form, is pretty constantly held between the lips and teeth, and, when the person wishes to speak, thrust between the latter and the gums, adding, in either case, greatly, in the opinion of a stranger, to the disgusting effects of the betel and areca preparation.

The Indian islanders are well known to be passionately addicted to the habitual *use of opium*, and yet the general use of this drug is but of comparatively recent introduction. They may have been taught the use of it by the Arabs; but the extensive and pernicious consumption which now distinguishes the manners of the Indian islanders, is to be ascribed to the commerce of the Europeans, and to the debauching influence of Chinese manners and example. Such is the universal taste for this drug, that it is limited only by the price. It is consumed, of course, in greatest quantity where it is cheapest, and a very inconsiderable rise or fall in price will augment or diminish the consumption in a surprising degree, even in countries where the people have been long accustomed to the habitual use of it. It is, however, a luxury, and a luxury

very highly taxed, and, of course, the consumption is far from being universal. The opium poppy is fortunately not a native of the Archipelago. Had it been so, a consumption of the drug coextensive with that of the areca and betle preparation might be apprehended, and the destructive consequences to population and morals would be certain. The habitual use of opium is wholly unlike that of the gentler narcotics, tea, coffee, areca, and even tobacco, but is far more pernicious than that even of any description of fermented liquor. As long as the use of it is restricted, it produces no ill consequences, but it is more seductive than any other intoxicating drug, and the free use of it more deleterious. The abuse of it is soon discovered by those accustomed to observe its victims. It produces general emaciation, a wild stare of the eye, a cough, a hectic, and a total loss of appetite. The whole of the tribes of the Indian islands invariably smoke, instead of eating or chewing opium, like the Turks, and other people of Asia. The case is exactly reversed with respect to it and tobacco. The mode of preparing and using it is well described by Mr Marsden. "The method of preparing it," says he, "for use, is as follows: The raw opium is first boiled or seethed in a copper vessel; then strained through a cloth, to free it from impurities; and then a second time boiled. The leaf of the *tam-*

baku, shred fine, is mixed with it, in a quantity sufficient to absorb the whole; and it is afterwards made up into small pills, about the size of a pea, for smoking. One of these being put into the small tube that projects from the side of the opium pipe, that tube is applied to a lamp, and the pill being lighted, is consumed at one whiff or inflation of the lungs, attended with a whistling noise. The smoke is never emitted by the mouth, but usually receives vent through the nostrils, and sometimes, by adepts, through the passage of the ears and eyes. This preparation of the opium is called *maadat*, and is often adulterated in the process, by mixing jaggri, or pine sugar, with it; as is the raw opium, by incorporating with it the fruit of the pisang, or plantain."*

The Indian islanders, although addicted to the use of intoxicating drugs more generally and more extensively than any other people, yet have no striking bias for vinous or spirituous liquor. I look upon this to be a constitutional matter, and the result of climate, for I believe the passion for spirituous liquor has never been known to exert a pernicious influence over the inhabitants of tropical climates. Had such a passion been natural to the Indian islanders, the productions of their country

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* *Marsden's Sumatra*, p. 277, 278.

would have afforded abundant means of gratifying it. They manufacture a sort of beer from rice, by a cheap and expeditious process, and their many palms afford a cheap and abundant supply of wine of an agreeable taste, and, when in a state of fermentation, highly intoxicating. Of these resources they cannot be said to take an undue advantage. Some of the tribes are restrained, indeed, by religious motives, but others, who have no scruples of this description, are sober, and although an occasional debauch may be committed, habitual drunkenness is so rare, that in my extensive intercourse, I cannot remember a single example of it.

CHAPTER IV.

GAMES AND AMUSEMENTS OF THE INDIAN ISLANDERS.

Universal passion of the Indian islanders for play.—Examples quoted.—Games of hazard.—Chess.—Combat of animals.—Cock-fighting.—Quail-fighting.—Combat of warlike crickets, &c.—Combat of the tiger and buffalo.—Combat of the wild boar with rams and goats.—Games of exercise.—Tournaments.—The chace.—Manner in which it is followed in Celebes.—In Java.—Love of dancing.—Character of the dances of the Indian islanders.—Different descriptions of it.—Intellectual amusements.—The drama.—The Javanese the inventors of the Polynesian drama.—Different descriptions of dramatic exhibitions.—Subjects of the Javanese drama.—Indian islanders passionately fond of dramatic exhibitions.—An improved drama might be successfully introduced among them, as an instrument of civilization.

The Indian islanders, like all people unaccustomed to regular and systematic occupation and industry, are passionately fond of play, and those tribes naturally carry it to the greatest degree of extravagance whose habits and lives are most irregular and unsettled. The Malays and inhabitants of Celebes are, by their extravagant attachment to gaming, distinguished beyond all the rest. Even among the Javanese, though they lead lives of

greater tranquillity, and are more in the exercise of habitual industry, the passion is general, pervading all orders, from the prince to the peasant. In illustration of the influence of this propensity, I shall mention a few instances, from which the reader will judge of its extent. In the central and most commercial provinces of Java, there is a class of ambulatory labourers, usually denominated *Bator*, and these afford to the stranger the most striking example of the pernicious effects of this vice. These persons are thoughtless and extravagant, and by starts idle and laborious. No sooner have they received their hard-earned wages, than they *form a ring* on the public street or highway, sit down deliberately, and squander it away. A person travelling through the most frequented roads of Java is constantly presented with such scenes. Such exhibitions, however, are not confined to this more dissolute class. On a market day, in every part of the country where open gaming is not absolutely prohibited, men and women, old and young, form themselves into groups in the streets of the market, for the purposes of play, and the attention of the stranger is soon attracted to these crowds, by the tumultuary and anxious vociferation of the players.

Of the passion of the Javanese for play, we have another striking illustration in the artifice resorted to by the proprietors of treasure, or other valuable property, to protect it at night from the depredation

of thieves, when it is transported from one part of the country to another. The only antidote to the supine carelessness and somnolency of the Javanese is play, and the proprietor of the property, therefore, furnishes the party with a sum to gamble for, which insures a degree of vigilance which no inducement of fear, duty, or reward, could command!

When engaged in play, we imagine the character of the natives appears for the moment thoroughly changed, for their grave, orderly, and calm manners, are changed into impatience, eagerness, and boisterous noise.

Among the Malays and people of Celebes, the influence of play is still more violent. After losing their money, they stake their jewels, their sidearms, their slaves, and, it is often alleged, men their wives and children, or, in the last extremity, their own personal freedom. With these tribes, the disputes which arise at the gaming-table are often terminated by the dagger, or generate incurable feuds between families.

Games of *hazard* are the favourites of the Indian islanders. They do not much practise games of sedentary skill, and games of exercise are neither congenial to their habits, nor to the climate they inhabit.

Of games of hazard, the most common and most gambling is a kind of chuck-farthing, acquired from

the Chinese, the most debauched of gamesters. From them, too, they have acquired the knowledge of cards, and of a kind of *faro*. From the Portuguese they have acquired the knowledge of dice, as the name *(dadu)* implies. Among the Javanese, the only game of pure hazard of native origin, consists in guessing the number of beans, of certain description, which the players hold in their hands. It is called by them *Talagatari*.

Of the sedentary games of skill, the native ones are a variety of descriptions played on checkers resembling our draughts.

Of the celebrated game of chess, supposed to have been invented by the Hindus, I must on this account say more than would otherwise be necessary. The collateral evidence afforded on this subject, from an examination of its history among the Indian islanders, does not tend to corroborate the hypothesis of chess having been invented by the Hindus. The Javanese, the tribe with whom the intercourse with the ancient Hindus was most busy, hardly know the game but by report, and even thus far they know it only by its Persian name. The Malays, on the contrary, know the game well, and are fond of it; but then they have acquired it in comparatively recent times, and in their modern intercourse with the Telingas. The evidence of language not only shows this, but shows also that the Telingas must themselves have borrowed

it from the Persians. *Chatur*, the name of the game, is Persian, and not Indian. *Sah*, "check," is the Persian word *shah*, king, and the only way in which the Indian islanders can pronounce it. *Bidah*, a *pawn*, is but a corruption of the Persian word *piadah*, a foot-soldier; *ter*, the Malayan name of *the castle*, is of the vernacular language of Kalinga; and *mat* is not, as some have imagined, a corruption of the Malayan word *mati*, dead, but the true Persian word for check-mate, borrowed by ourselves, and still more accurately by the French.

Is it not probable, that, had the Hindus, when they enjoyed a *monopoly* of the intercourse with the Indian islanders, known the game of chess, they would have recommended themselves to a people passionately addicted to play, by instructing them in this interesting game? They *did not* instruct them; and the probability therefore is, that they themselves did not understand it. Sir William Jones acknowledges, that no account of such a game exists in the writings of the Brahmans.

But of all the species of gaming, that to which the Indian islanders are most fondly addicted is staking on the issue of the combat of pugnacious animals. The cock, from his superior courage, is the great favourite; and the diversion of cock-fighting is most especially in vogue among the Malays, the people of Celebes, and the Balinese. To these tribes the game-cock is such an object of

interest, that their songs and poetry are full of his praises. The breed most esteemed is the produce of Celebes. The Javanese fight their cocks, like the Mahomedans of Hindustan, without spurs; the Malays, Bugis, and Macassars, with an artificial spur, in the shape of a small scythe, which, however, notwithstanding its barbarous appearance, is in reality less destructive than the form in use among ourselves.

Quail-fighting, more particularly among the Javanese, is extremely common. The most famous breed is brought from the island of *Lombok*. It is singular that it is the female, the male being comparatively a timid and small bird, which is used in these bitter, but bloodless combats.

The Javanese do not disdain to be amused by a battle between two warlike crickets, called, in their language, *jangkreh*, nor hesitate to bet considerable sums on the result. The little animals are excited to the combat by the titillation of a blade of grass *judiciously* applied to their noses!!

The puerility of the Javanese in matters of this sort does not end here. They will risk their money on the strength and hardness of a particular nut, called the *kămiri*, and much skill, patience, and dexterity, are consumed in the selection and the strife. At other times the combat, which is to decide the fortune of the parties, is between two paper kites; the object in this strife

being the fall of the adversary by the destruction of its string. In a favourable day, fifty or sixty of these will be sometimes seen hovering over a Javanese city.

Other diversions, depending on the courage or ferocity of animals, and independent of play, are common. Among the Javanese, the most interesting of these is the combat of the tiger and buffalo. The buffalo of the Indian islands is an animal of great size and strength, and of no contemptible courage; for he is an overmatch for the royal tiger, hardly ever failing to come off victorious in the fight with him. It must be confessed that there is no small satisfaction in seeing this peaceful and docile animal destroy his ferocious and savage enemy. Neither are possessed of much active courage; the tiger, indeed, is a coward, and fights only perfidiously, or through necessity. On this account, it is necessary to confine them within very narrow limits, and farther, to goad them by various contrivances. A strong cage, of a circular form, about ten feet in diameter, and fifteen feet high, partly covered at the top, is for this purpose constructed, by driving stakes into the ground, which are secured by being interwoven with bamboo. The buffalo is first introduced, and the tiger let in afterwards from an aperture. The first rencounter is usually tremendous; the buffalo is the assailant, and his attempt is to crush his antagonist to death against the

strong walls of the cage, in which he frequently succeeds. The tiger, soon convinced of the superior strength of his antagonist, endeavours to avoid him, and when he cannot do so, springs insidiously upon his head and neck. In the first combat of this nature to which I was witness, the buffalo, at the very first effort, broke his antagonist's ribs against the cage, and he dropped down dead. The buffalo is not always so fortunate. I have seen a powerful tiger hold him down, thrown upon his knees, for many seconds; and in a few instances, he is so torn with wounds that he must be withdrawn, and a fresh one introduced. In nineteen cases out of twenty, however, the buffalo is the victor. After the first onset, there is little satisfaction in the combat; for the animals, having experienced each other's strength and ferocity, are reluctant to engage, and the practices used to goad them to a renewal of the fight are abominable. The tiger is roused by firebrands and boiling water, and the buffalo, by pouring upon his hide a potent infusion of capsicums, and by the application of a most poisonous nettle, *(kămadu,)* a single touch of which would throw the strongest human frame into a fever.

Wild hogs, which are in vast abundance in Java, are ensnared and fought against rams and goats, a ludicrous, but bloodless combat. The wild boar of Java is an animal of little ferocity, and not much strength.

A combat between two bulls, such as the people of Butan, and other countries to the north of Bengal,* delight in, is a favourite exhibition among some of the people of the island of Madura. I have not heard that it is practised elsewhere.

Of games of exercise or amusement, displaying address or agility, the Indian islanders are not fond, and never excel in them. In all their exercises they would rather sit than stand, even where there is an obvious advantage in the latter position. If, for example, a chief amuses himself with the exercise of the bow and arrow, it is always sitting, and not standing, that he takes the diversion. A kind of foot-ball, called *separaga*, is played by most of the tribes, but is not a favourite pastime.

When the monarch in Java, according to the custom of the east, shows himself once a week to his subjects, or the governors of provinces, in imitation of him, to their dependents, a kind of awkward tilts are exhibited. The Javanese are bad riders; their horses are clumsily, and badly, though often gorgeously caparisoned, and are too small in size to possess the strength and action necessary to make a fine display in a tournament. These Lilliputian justs, therefore, are a mock upon military exercises.

All the civilized nations of the Archipelago have

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* Turner's Account of an Embassy to the Court of the Teshoo Lama.

long passed that stage of society in which *the chace* is pursued for subsistence. From the circumstances of the country, the probability indeed is, as has been pointed out elsewhere, that the progress towards civilization was not in general from the hunter state, but that of the fisherman. Some of the more abject tribes of savages, however, confined to the mountains and forests of the interior, while the fisheries of the coasts and rivers are in the occupation of powerful enemies, pursue the chace as the principal means of subsistence. The negro races which inhabit the interior of the Malayan Peninsula hunt the deer, the hog, the monkey, and all the animals of the forest, as the chief means of livelihood, and use poisoned arrows to destroy their game.

Of the civilized races who pursue the chace for amusement, the most celebrated hunters are the natives of Celebes, who are passionately fond of the chace.

Celebes, contrary to the more usual character of the other great islands, abounds in extensive grassy plains free from forests, which afford the proper cover and food for a variety of the best game, such as various kinds of deer, the wild hog and ox, which are not disturbed by beasts of prey; for in Celebes the tiger and leopard, which are plentiful in the western countries, do not exist. These plains are looked upon as the common property of

the tribe to whom they belong, and are so jealously guarded from the intrusion of strangers, that it would be death to an alien to enter them. No sooner is the rice seed cast into the ground, than the chiefs and their retainers fly with enthusiasm to the sports of the field. Persons of all ages join in the diversion. A native, describing to me the ecstasy of the hunters on these occasions, observed, with the strongest allusion which their manners could suggest, that all care and anxiety were buried in the transports of the chace, a man then forgetting that he had a family, and that he was a father. A hunting party frequently consists of not less than 200 horsemen. A man of sixty has been pointed out to me, who, on such occasions, has hunted down several stags in a day's chace. Although pretty strict Mahomedans, at such times they will not even disdain the pursuit of the wild boar, but follow him with ardour.

The chace is pursued on horseback. The horses of Celebes, though small, seldom exceeding thirteen hands high, are larger, and unite a greater share of blood and strength than any other breed of the Indian islands. They are regularly trained to hunt, and possess a considerable share of fleetness, and more of perseverance. They are not encumbered by any useless weight, being rode bare backed, with a very slight snaffle bridle. The hunter is armed with a light spear, to the

shaft of which is attached a moveable noose, and his principal aim is to cast this noose over the horns of the deer or wild bull. When he succeeds in entangling the animal, he leaps off his horse, and dispatches him with his spear.

The chace is followed in Java with less ardour and spirit, and with much less skill. The game has fled from the extensive plains of the central portion of the island, which are highly cultivated and highly peopled, to take shelter in the hilly country, where they cannot be pursued. Here, therefore, the chace hardly forms any portion of the amusement of the people. In the ill peopled districts of the eastern and western extremities of the island, the chace is pursued on horseback as in Celebes, but the deer and wild hog are rather beset than fairly pursued, an attempt being made to surround their haunts by a multitude of peasantry assembled for the purpose, while, on their appearance, they are bayed by dogs, and mangled with cutlasses.

The tiger is sometimes pursued by the Javanese with more skill, and in a manner peculiar to themselves. An extensive circle of spearmen is formed round the known haunt of a tiger, which is gradually contracted, until the animal, hemmed in on all sides, is compelled at length to attempt an escape by rushing through the phalanx of spearmen. In this endeavour he is commonly killed through the num-

bers and dexterity of the hunters, and the formidable length of their weapons.

An amusement of the same sort is often presented, *in a more comfortable manner*, before the Javanese sovereigns at their palaces, but from the superior number and dexterity of the spearmen, and the inferior courage of the entrapped tiger, it is attended with less risk. Among a great many exhibitions of this sort to which I have been witness, I never knew an instance in which the tiger was not destroyed without the least difficulty.

The love of *dancing*, in a variety of shapes, is a favourite passion of the Indian islanders. It is somewhat more, indeed, than an amusement, often mingling itself with the more serious business of life. Dancing, as practised by them, is neither the art, as it exists among the savages of America, nor among the Hindus and Mahomedans of Western India. Like the latter, they have professed dancing women, who exhibit for hire; but, like the former, they occasionally dance themselves, and in public processions, and even more serious occasions, dancing forms a portion of the solemnities.

Whatever be the occasion in which dancing is exhibited, it is always grave, stately, and slow, never gay nor animated. As in all Asiatic dancing, it is not the legs but the body, and especially the arms, down to the very fingers, that are em-

ployed. Dexterity, agility, or liveliness, are never attempted. To the gravity and solemnity which belong to the inhabitants of a warm climate, any display of agility would appear as indecorous, as their stately and sluggish minuet dancing appears insupportably tiresome to our more volatile and lively tempers.

The dancing of the Indian islanders may be considered as of three kinds,—their serious dances on public occasions,—the private dances of individuals at festivities,—and the exhibitions of professed dancers.

Of the first kind are the war dances of the people of Celebes. If a warrior throws out a defiance to his enemy, it is done in a dance in which he brandishes his spear and kris, pronouncing an emphatic challenge. If a native of the same country runs a muck, ten to one but he braves death in a dancing posture. When they swear eternal hatred to their enemies, or fidelity to their friends, the solemnity is accompanied by a dance. There is a good deal more vivacity on these occasions than I ever saw exhibited on any other of the same kind.

All orders executed in the presence of a Javanese monarch, on public occasions, are accompanied by a dance. When a message is to be conveyed to the royal ear, the messenger advances with a solemn dance, and retreats in the same way. The ambassadors from one native prince in Java to

another follow the same course when coming into and retiring from the presence of the sovereign to whom they are deputed. When the persons whose business it is to let the tiger loose from his cage into the hollow square of spearmen, as above mentioned, have performed their duty, and received the royal nod to retire, an occasion, one would think, when dancing might be spared, they do so in a slow dance and solemn strut, with some risk of being devoured by the tiger, in the midst of their performance.

Previous to the introduction of the Mahomedan religion, it appears to have been the custom of all the oriental islanders, for the men of rank, at their public festivities, when heated with wine, to dance. Upon such occasions, the exhibition appears to have been a kind of war dance. The dancer drew his kris, and went through all the evolutions of a mock fight. At present the practice is most common among the Javanese, with every chief of whom dancing, far from being considered scandalous, as among the people of Western India, is held to be a necessary accomplishment. * Re-

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* In Dampier's time, and I suppose to the present day, the people of Mindanao followed the same practice. "It was not long before the general caused his dancing women to enter the room, and divert the company with that pastime. I had forgot to tell you, that they have none but vocal music here by what I could learn, except only a row of a kind of bells

spectable women never join in it, and with that sex, dancing is confined to those whose profession it is. In the most crowded circle of strangers, a Javanese chief will exhibit in the mazes of the dance with an ordinary dancing girl, or, in other words, with a common prostitute. I have often seen the sultan of Madura, a most amiable and respectable prince, in this situation. The dance at such times is nothing more than the slow and solemn pacing exhibited on other occasions.

The professed dancers differ little but in inferiority of skill, from the common dancing girls of Hindustan. Those who have been often disgusted with the latter, will find still less to interest them in the former. The music to which

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without clappers, sixteen in number, and their weight increasing gradually from about three to ten pound weight. These were set in a row, on a table in the general's house, where, for seven or eight days together, before the circumcision day, they were struck each with a little stick, for the biggest part of the day making a great noise, and they ceased that morning. So these dancing women sung themselves, and danced to their own music. After this the general's women, and the sultan's sons, and his nieces, danced. Two of the sultan's nieces were about 18 or 19 years old, the other two were three or four years younger. These young ladies were very richly dressed, with loose garments of silk, and small coronets on their heads. They were much fairer than any women I did ever see there, and very well featured; and their noses, though but small, yet higher than the other women, and very well proportioned."—*Dampier's Voyages,* Vol. I. p. 342.

the dancing is performed is, indeed, generally incomparably better than that of Western India, although the vocal part of it is equally harsh and dissonant. Now and then a single voice of great tenderness and melody may be found, but whenever an effort is made at raising it for the accommodation of an audience, it becomes harsh and unmusical. The songs sung on such occasions are often nothing more than unpremeditated effusions, but among the Javanese, to whom I am now more particularly alluding, there are some national ballads, that might bear a comparison with the boasted odes of the Persian minstrels.

The singular fact of the sovereign having, among the Javanese, the most beautiful and admired of his concubines instructed to dance, and their exhibiting their performance in public, accords with what I have stated respecting the condition of women among the Indian islanders. *

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* Commodore Beaulieu's account of a dance exhibited before the king of Achin is somewhat peculiar, but very characteristic :—" Then came fifteen or twenty women, who ranged themselves by the wall side, and each of them having little drums in their hands, sung their king's conquests, making their voices answer the drums. After that there came in, at a little door, two little girls, very oddly dressed, but very handsome, and whiter than any I ever saw in so hot a country. Upon their head they had a sort of hat, made of spangles of gold, which glittered mightily, together with a plume about a foot and a half high, made of the same spangles. This hat hung down upon one ear. They had large ear-pendants of spangles of gold, hanging down to their shoulders. Their

The intellectual amusements of the Indian islanders consist of *listening to professed story-tellers,*

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neck was covered with necklaces of gold, and upon their shoulders was a sort of jacket of gold, curiously engraven, under which was a shift, or waistcoat of cloth of gold, with red silk, covering their breast, and a very broad girdle, made of gold spangles. Their girdle was tied above the haunches, from which there hung a cloth of gold, with straight breeches underneath, which were likewise made of cloth of gold, and did not pass the knees, where several bells of gold hung upon them.

"Their arms and legs were naked, but, from the wrist to the elbow, were adorned with bracelets of gold and jewels, as well as from the ancle to the calf of their leg. At their girdle each of them had a sword, the hilts and scabbards of which were covered with jewels; and in their hands a large fan of gold, with several little bells about it. They advanced upon the carpet with a profound gravity, and, falling upon their knees before the king, saluted him, by joining their hands, and lifting them up to their head; then they began to dance, with one knee upon the ground, making several motions with their body and arms; after that they danced upright, with a great deal of agility and cadence, sometimes putting their hands to their swords, another time making as if they shot a bow, and sometimes as if they had a shield and hanger in their hands. This lasted about half an hour, after which they kneeled before the king, and, in my opinion, were pretty well tired. for each of them had above forty pound weight of gold upon her. However, they danced with a very good grace, and if our French dancing-masters had seen them, they would have owned their performance not to have been what we account barbarous."—*Harris's Collection of Voyages*, Vol. I. p. 732.

or to those who make a business of rehearsing their written compositions, and of *dramatic performances*. The first will be described in another part of this work. The last deserve a particular description in this place. The Javanese are the inventors of the Polynesian drama, and throughout the Archipelago are celebrated for their skill in it. As the rudest and earliest efforts of the stage, and as affording interesting elucidations of the character and manners of the people, these exhibitions deserve a degree of attention which they are far from meriting on their own account.

Among the Javanese there are no dramatic writings; there is no stage, and no attempt at scenic deception. The acting is of two kinds, in equal esteem among the people themselves, one consisting in the performance of living actors, and the other in that of puppets. The first sometimes exhibit without masks, but much more frequently with them. They are invariably men, for women never perform. The second are of two kinds, one consisting of ordinary puppets, much inferior, in ingenuity, to those among ourselves, and the other of certain scenic shadows, which are peculiar and national. These last are monstrous and grotesque figures, of about twenty inches long, cut out of a stiff untanned buffalo hide, and commonly very highly gilt and painted. In the representation they are moved by the prompter behind an ob-

long screen, of ordinary white cloth, rendered translucent by having a lamp suspended behind.

All their acting may be considered as a kind of pantomime, for, even in the most perfect exhibitions, there is little dialogue. Each player does not study his part, or, at least, get it by heart; but the little he says he furnishes unpremeditated, as his recollection of the story, or his fancy, may assist him.

The great mover in the drama, whether mock or real, is the prompter, or *dalang*, as he is called in the native language. This person's office is very inadequately described by calling him the prompter; he is the soul of the whole drama, and his functions are better depicted by comparing him to our ancient bards or minstrels. He sits full in front of the audience, holding before him one of the common metrical romances, from which, in the chaunting accents of *the East*, he repeats, before the interlocutors commence acting, the narrative of what they have to perform. This practice he perseveres in from the beginning to the end of the play. He does the same thing with the scenic shadows, seldom venturing, however, to furnish a dialogue for the puppets.

From this account of the Javanese drama, it will be easily seen that a play or piece is not intended to be a skilful and interesting representation of the real business of the world, or of human

passions, enjoyments, and sufferings, but the simple and artless relation of a common tale, some of the most prominent adventures of which are dramatized in the representation, while the principal stream of the narrative is conducted by the relation of the bard.

The acting, consistent enough with the manners of the people, is heavy and monotonous. There is no life nor action in it, and nothing natural. The players dance instead of walking, and when they speak, it is in a counterfeit and fictitious tone of voice, hardly, in short, in the accents of human beings. Their dresses are characteristic and proper, generally in the ancient costume of the country, suitably to the parts they have to perform. A full band of Javanese music, in the manner of a chorus, constantly accompanies every kind of acting.

The subjects of the Javanese drama are the Hindu legends of the Ramayana and Mahabarat, and those of the fabulous periods of their own history. The empire of custom, so arbitrary among all barbarians, renders it a rule not to be transgressed, that the performance by scenic shadows should be confined exclusively to the representations of Hindu story; the true acting to the most ancient portion of their own legendary history, and the ordinary puppet-show to the more modern.

Besides the more regular dramatic entertain-

ments now alluded to, there are two others occasionally introduced, in the manner of interludes, between the scenes of the more regular performances, which afford more amusement to the stranger. One is an exhibition of buffoonery, which I have seen so well acted as to afford much merriment. The only personages who *can be facetious*, by the rules of the Javanese drama, are *Sămar* and *Bagong*, the redoubted friends and servants of Arjuna and Rama. The acting of the persons who represent these characters is less constrained, more bustling, and more natural than that of any others. So much drollery is frequently displayed as to convince us that the Javanese have considerable comic powers; and that, if the sphere of their acting were enlarged, and their talent cultivated, they might make excellent comic actors.*

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* The Siamese drama bears, in almost every particular, so close a resemblance to that of the Javanese, that it is impossible not to suspect that both had a common origin.

"Les Siamois ont trois sortes de spectacles de théatre. Celuy qu'ils appellent *cŏne* est une danse à plusieurs entrées, au son du violon & de quelques autres instrumens. Les danseurs sont masquez & armez, & représentent plûtost un combat qu'une danse: & quoy que tout se passe presque en mouvemens élevez & en postures extravagantes, ils ne laissent pas d'y mêler de temps en temps quelque mot. La plûpart de leurs masques sont hideaux & representent ou des bêtes monstrueuses, ou des especes de diables. Le spectacle qu'ils appellent *Lacóne* est

The second description of acting is a kind of pantomimic exhibition of wild beasts, where the

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un poëme mêlé de l'Epique & du dramatique, que dure trois jours depuis huit heures du matin jusqu'à sept du soir. Ce sont des histoires en vers, sérieuses, & chantées par plusieurs acteurs toûjours présens, & qui ne chantent que tour à tour. L'un d'eux chante le rôle de l'historien, & les autres ceux des personages que l'histoire fait parler : mais ce sont tous hommes qui chantent, & point de femmes. Le *Rabam* est une double danse d'hommes & de femmes, qui n'est point guerriére, mais galante, et on nous en donna le divertissement avec les autres, que j'ay dit cydessus que l'on nous avoit donnez. Ces danseurs & ces danseuses ont tous des ongles faux, & fort longs, de cuivre jaune : ils chantent des paroles en dansant ; & ils le peuvent sans se fatiguer beaucoup, parce que leur maniére de danser n'est qu'une simple marche en rond, fort lente, & sans aucun mouvement élevé, mais avec beaucoup de contorsions lentes du corps & des bras, aussi ne se tiennent-ils pas l'un l'auture. Deux hommes cependant entretiennent le spectateur par plusieurs sottises que l'un dit au nom de toutes les danseurs, & l'autre au nom des toutes les danseuses. Tous ces acteurs n'ont rien de singulier dans leurs habits : seulement ceux qui dansent au Rabam & au Cône, ont des bonnets de papier doré hauts & pointus à peu prés comme les bonnets de cérémonie des Mandarins, mais qui descendent par les côtez jusqu'au dessous des oreilles, & qui sont garnis de pierreries mal contrefaites, & de deux pendans d'oreille de bois doré. Le Cône & le Rabam font toûjours appelez aux funerailles, & quelquefois en d'autres rencontres ; & il y a apparence que ces spectacles n'ont rien de Réligieux, puis qu'il est défendu aux Talapoins d'y assister. Le *Lacöne* sert principalement pour solemniser la fête de la dédicace d'un Temple neuf, lors qu'on y plaee une statuë neuve de leur Sommona-Codom" *La Loubere*, Tom. i. p. 148 - 150.

players, dressed out in the figure of the various animals of the forest, personate their habits and exhibit their manners. The matter is so well managed as to make us almost believe that we are in the disagreeable company of the tiger, the leopard, or the wild boar.

Whatever strangers may think of the dramatic entertainments of the Indian islanders, they excite a deep and lively interest in a native audience. By means of them, even the most illiterate gain a considerable acquaintance with the legendary history of their country. The habit of listening to such performances convinces me that it would be no difficult matter to introduce among the Javanese at least, a more improved drama. In the first instance, such performances might be adapted to their tastes, by being built on the foundation of their own legends. A judicious paraphrase of *The Tempest*, for example, composed on this principle, I have little doubt would be eminently successful. The effects of such exhibitions, as an instrument of civilization, need not be insisted upon.

CHAPTER V.

MANNERS OF FOREIGN SETTLERS.

Different descriptions of foreign colonists.—Settlers from Hindustan.—Their character.—The Chinese.—Their character and manners.—Arab settlers.—European settlers.—Character of the Dutch colonists.—Of the Spanish colonists.

THE object of this chapter is to furnish a brief sketch of the character, habits, and manners, of the principal foreign settlers among the Indian islanders. These consist of Indians, Chinese, Arabs, and Dutch. Stragglers of other nations are found among the Indian islanders, but, in a general view, they are not deserving of a particular consideration.

The *natives of Hindustan*, who visit the oriental islands, are inhabitants of the western, but chiefly of the eastern, coast of the Peninsula. Europeans denominate them generally by the name of Chulia, and the natives of the country call them, more properly, *Kaling*. The numerous vessels of their nation bring annually, with the setting in of the westerly monsoon, shoals of these people, literally to seek their fortunes in a country richer by na-

ture than their own, less occupied, and the natives of which are easily circumvented. In their character these adventurers are shrewd, supple, unwarlike, mendacious, and avaricious. Trade is their main pursuit, but when labour is well rewarded, as in the British settlement of Prince of Wales Island, they occupy themselves in day-labour. A large portion of these emigrants return to India, but a considerable one also colonizes in the country, intermarrying with the natives; for it is rarely that the females of their own nation accompany them. The motley race formed by these unions is a compound character of no very amiable description, partaking of the vices of both parent stocks. They are known by the name of *Păranakan*, or half-casts, speak and generally write the language of both parents, and, through their keenness, activity, and endowments, contrive to enjoy a large share of the patronage of the native princes in whose states they are settled. This description of settlers is confined to the western portion of the Archipelago, and, comparatively, few of them are found beyond Sumatra and the Peninsula. The eastern parts are distant from their native country, and when they reach it, they have there to encounter the active competition of the Chinese, a race superior in energy and talent to themselves.

Of all foreign nations, *the Chinese* have settled in the greatest number in the Archipelago. Their

country, overflowing with inhabitants, lies close to the Indian islands, and a constant intercourse is kept up between them. The Chinese junks never fail to bring a large supply of emigrants, and the European trading ships frequently do the same thing. But for the peculiar laws of China, which check the progress of emigration by interdicting that of women entirely, we should long ago have seen the principal portion of the Archipelago colonized by this race. Many of the Chinese return to their own country, and the first intention of every emigrant is probably to do so, but circumstances detain a number of them in the islands, who, intermarrying with the natives of the country, generate a race inferior in energy and spirit to the original settler, but speaking the language, wearing the garb, professing the religion, and affecting the manners of the parent country. The Chinese settlers may be described as at once enterprising, keen, laborious, luxurious, sensual, debauched, and pusillanimous. They are most generally engaged in trade, in which they are equally speculative, expert, and judicious. Their superior intelligence and activity have placed in their hands the management of the public revenue, in almost every country of the Archipelago, whether ruled by natives or Europeans; and of the traffic of the Archipelago with surrounding foreign states, almost the whole is conducted by them. From China they

have imported into the Indian islands the agricultural skill which distinguishes that country above all others of Asia. This skill is advantageously transferred to the culture of tropical products, to that of the sugar-cane, pepper, and indigo. In the western countries, where there is least competition from the natives of the country, the Chinese employ themselves in handicraft trades, and are the best and most expeditious workers in wood and iron. They very seldom condescend to work as day-labourers. They are the least conscientious people alive; the constant prospect of gain or advantage must be presented to them to induce them to fulfil their engagements, which they will always evade when their judgment is not satisfied that an adherence to them will be certainly profitable. *

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* The following singularly accurate portrait of the Chinese colonists and traders of the Archipelago is given by Sir Thomas Herbert, in the quaint language of his time;—"The town of its own growth affords little save rice, pepper, and cotton-wool; albeit, pepper for the greatest part is brought thither by the infinitely industrious Chyneses, who each January come to an anchor in multitudes at this port, and unload their junks or praws from Jamby in Sumatra, Borneo, Malacca, and other places, making Bantam their magazine; out of which, for rials, or by exchange for other commodities, they supply the English, Dutch, and other nations. The Chyneses are no quarrellers, albeit voluptuous, venereous, costly in their sports, great gamesters, and in trading too subtle for young merchants:

The Chinese who visit the Indian islands, and settle in them, are all from the maritime provinces of Canton and Fokien. Those from the latter bear a much better character than those from the former. They are rarely from the lowest orders of society, and they are less gross and abject in their manners. The principal bulk of the settlers are in Java, Borneo, and the little island of Penang; but a few scattered families are to be found in every country of the Archipelago in any manner civilized.

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oft times so wedded to dicing, that, after they have lost their whole estate, wife and children are staked; yet in little time, Jew-like, by gleaning here and there, are able to redeem their loss; if not at the day, they are sold in the market for most advantage."—*Herbert's Travels*, p. 364. Dampier thus describes the same busy and extraordinary people, in his account of Achin:—"But of all the merchants that trade to this city, the Chinese are the most remarkable. There are some of them live here all the year long; but others only make annual voyages hither from China. These latter come hither sometime in June, about ten or twelve sail, and bring abundance of rice, and several other commodities. They take up houses all by one another, at the end of the town next the sea; and that end of the city is called the China camp, because there they always quarter, and bring their goods ashore thither to sell. In this fleet come several mechanics, viz. carpenters, joiners, painters, &c. These set themselves immediately to work, making of chests, drawers, cabinets, and all sorts of Chinese toys; which are no sooner finished at their working houses, but they are presently set up

The *Arab* settlers are more considerable from their influence than their numbers. The Arabians began at a very early period to trade to the Archipelago. In 1296, when Marco Polo * visit-

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in shops, and at the doors to sale. So that for two months or ten weeks this place is like a fair, full of shops' stuff, with all sort of vendible commodities, and people resorting hither to buy; and as their goods sell off, so they contract themselves into less compass, and make use of fewer houses. But as their business decreases, their gaming among themselves increases; for a Chinese, if he is not at work, had as lieve be without victuals as without gaming; and they are very dexterous at it. If before their goods are all sold, they can light of chapmen to buy their ships, they will gladly sell them also, at least some of them, if any merchant will buy; for a Chinese is for selling every thing, and they who are so happy as to get chapmen for their own ships, will return as passengers with their neighbours, leaving their camp, as 'tis called, poor and naked, like other parts of the city, till the next year. They commonly go away about the latter end of September, and never fail to return again at the season, and while they are here, they are so much followed, that there is but little business stirring for the merchants of any other nations; all the discourse then being of going down to the China camp. Even the Europeans go thither for their diversion; the English, Dutch, and Danes, will go to drink their hoc-ciu, at some China merchant's house who sells it: for they have not tippling-houses. The European seamen return thence into the city drunk enough, but the Chinese are very sober themselves."—Vol. II. pp. 136, 137.

* *Marsden's Marco Polo*, p. 601.

ed Sumatra, he found many of the inhabitants of the coast converted to the Mahomedan religion, and about the end of the fourteenth century Mahomedanism had become the national religion of some of the most considerable of the western tribes. Arabian adventurers have settled in almost every country of the Archipelago, and intermarrying with the natives of the country, begot a mixed race, which is pretty numerous. Of all the nations of Asia who meet on this *common theatre*, the Arabs are the most ambitious, intriguing, and bigotted. They have a strength of character, which places them far above the simple natives of the country, to whom, in matters of religion, they dictate with that arrogance with which the meanest of the countrymen of the prophet consider themselves entitled to conduct themselves. They are, when not devoted to spiritual concerns, wholly occupied in mercantile affairs, and the genuine Arabs are spirited, fair, and adventurous merchants. The mixed race is of a much less favourable character, and is considered as a supple, intriguing, and dishonest class.

The *Dutch* and *Spaniards* are the only European people who have colonized in the Indian Archipelago, or at least who now exist there as colonists. The Dutch are permitted freely to purchase and hold lands, and in Java especially may fairly be considered as naturalized. The

Creole and mixed races partake at least as much of the native character as of that of the genuine Hollander. Without the means of acquiring a liberal education, living under a suspicious and perverse order of government, as a privileged caste, exercising a tyranny over the great body of the population, and entirely served by slaves, it cannot be supposed that such untoward circumstances should beget a character of many virtues. The mixed races of the Dutch are, accordingly, with very partial exceptions, a timid, servile, sensual, indolent, and uneducated people. Their manners and habits will be best described in the language of a Dutch traveller of good sense and sound observation, who had ample opportunity of noting them, and who cannot be suspected of harbouring any undue prejudices against his countrymen. About the year 1770, and there is not much difference since, Admiral Stavorinus gives the following sketch of the Dutch colonists of Batavia.

"Europeans, whether Dutch or of any other nation, and in whatever station they are, live at Batavia, nearly in the same manner. In the morning, at five o'clock, or earlier, when the day breaks, they get up. Many of them then go and sit at their doors; but others stay in the house, with nothing but a light gown, in which they sleep, thrown over their naked limbs; they then breakfast upon coffee or tea; afterwards they dress

and go out, to attend to the business they may have. Almost all, who have any place or employment, must be at their proper station, at or before eight o'clock, and they remain at work till eleven, or half past. At twelve o'clock they dine, take an afternoon's nap till four, and attend to their business again till six, or take a tour out of the city in a carriage. At six o'clock they assemble in companies, and play or converse till nine, when they return home; whoever chooses to stay to supper is welcome, and eleven o'clock is the usual hour of retiring to rest. Convivial gaiety seems to reign among them, and yet it is linked with a kind of suspicious reserve, which pervades all stations, and all companies, and is the consequence of an arbitrary and jealous government. The least word that may be wrested to an evil meaning, may bring on very serious consequences if it reach the ears of the person who is aggrieved, either in fact or in imagination. I have heard many people assert, that they would not confide in their own brothers in this country.

"No women are present at these assemblies; they have their own separate companies.

"Married men neither give themselves much concern about their wives, nor show them much regard. They seldom converse with them, at least not on useful subjects, or such as concern society. After having been married for years, the ladies

are often, therefore, as ignorant of the world and of manners as upon their wedding-day. It is not that they have no capacity to learn, but the men have no inclination to teach.

" The men generally go dressed in the Dutch fashion, and often wear black.

" As soon as you enter a house, where you intend to stop for an hour or more, you are desired by the master to make yourself comfortable, by taking off some of your clothes, &c. This is done, by laying aside the sword, pulling off the coat and wig, (for most men wear wigs here,) and substituting in the room of the last a little white night-cap, which is generally carried in the pocket for that purpose.

" When they go out, on foot, they are attended by a slave, who carries a sunshade (called here *sambreel* or *payang*) over their heads; but whoever is lower in rank than a junior merchant may not have a slave behind him, but must carry a small sunshade himself.

" Most of the white women, who are seen at Batavia, are born in the Indies. Those who come from Europe at a marriageable age are very few in number. I shall, therefore, confine my observations to the former.

" These are either the offspring of European mothers, or of oriental female slaves, who, having first been mistresses to Europeans, have afterwards

been married to them, and have been converted to Christianity, or at least have assumed the name of Christians.

" The children produced by these marriages may be known, to the third and fourth generation, especially by the eyes, which are much smaller than in the unmixed progeny of the Europeans.

" There are likewise children, who are the offspring of Portuguese, but these never become entirely white.

" Children born in the Indies are nicknamed *liplaps* by the Europeans, although both parents may have come from Europe.

" Girls are commonly marriageable at twelve or thirteen years of age, and sometimes younger. It seldom happens, if they are but tolerably handsome, have any money, or any to expect, or are related to people in power, that they are unmarried after that age.

" As they marry while they are yet children, it may easily be conceived, that they do not possess those requisites which enable a woman to manage a family with propriety. There are many of them who can neither read nor write, nor possess any ideas of religion, of morality, or of social intercourse.

" Being married so young, they seldom get many children, and are old women at thirty years of age. Women of fifty, in Europe, look young

er and fresher than those of thirty at Batavia. They are, in general, of a very delicate make, and of an extremely fair complexion; but the tints of vermillion, which embellish our northern ladies, are wholly absent from their cheeks; the skin of their face and hands is of the most deadly pale white. Beauties must not be sought amongst them; the handsomest whom I saw would scarcely be thought middling pretty in Europe.

" They have very supple joints, and can turn their fingers, hands, and arms, in almost every direction; but this they have in common with the women in the West Indies, and in other tropical climates.

" They are commonly of a listless and lazy temper; but this ought chiefly to be ascribed to their education, and the number of slaves, of both sexes, that they always have to wait upon them.

" They rise about half past seven, or eight o'clock in the morning. They spend the forenoon in playing and toying with their female slaves, whom they are never without, and in laughing and talking with them, while a few moments afterwards, they will have the poor creatures whipt most unmercifully for the merest trifle. They loll, in a loose and airy dress, upon a sofa, or sit upon a low stool, or upon the ground, with their legs crossed under them. In the mean time, they do not omit the chewing of pinang or betel, with which

custom all the Indian women are infatuated; they likewise masticate the Java tobacco; this makes their spittle of a crimson colour, and when they have done it long, they get a black border along their lips, their teeth become black, and their mouths are very disagreeable, though it is pretended that this use purifies the mouth, and preserves from the toothach.

"As the Indian women are really not deficient in powers of understanding, they would become very useful members of society, endearing wives, and good mothers, if they were but kept from familiarity with the slaves in their infancy, and educated under the immediate eye of their parents, who should be assiduous to inculcate, in their tender minds, the principles of true morality, and polished manners. But, alas! the parents are far from taking such a burthensome task upon themselves. As soon as the child is born, they abandon it to the care of a female slave, who generally suckles it, and by whom it is reared, till it attains the age of nine or ten years. These nurses are often but one remove above a brute, in point of intellect; and the little innocents imbibe, with their milk, all the prejudices and superstitious notions, which disgrace the minds of their attendants, and which are never eradicated during the remainder of their lives, but seem to stamp them rather with

the character of the progeny of despicable slaves, than of a civilized race of beings.

" They are remarkably fond of bathing and ablutions, and they make use of a large tub for this purpose, which holds three hogsheads of water, and in which they immerge their whole body, at least twice a week. Some of them do this in the morning, in one of the running streams out of the city.

" In common with most of the women in India, they cherish a most excessive jealousy of their husbands, and of their female slaves. If they discover the smallest familiarity between them, they set no bounds to their thirst of revenge against those poor bondswomen, who, in most cases, have not dared to resist the will of their masters, for fear of ill treatment.

" They torture them in various ways; they have them whipt with rods, and beat with rattans, till they sink down before them, nearly exhausted: among other methods of torturing, they make the poor girls sit before them in such a posture, that they can pinch them with their toes, in a certain sensible part, which is the peculiar object of their vengeance, with such cruel ingenuity, that they faint away by excess of pain.

" I shall refrain from the recital of instances, which I have heard, of the most refined cruelty practised upon these wretched victims of jealousy,

by Indian women, and which have been related to me by witnesses worthy of belief; they are too repugnant to every feeling of humanity, and surpass the usual bounds of credibility.

"Having thus satiated their anger upon their slaves, their next object is to take equal revenge upon their husbands, which they do in a manner less cruel, and more pleasant to themselves.

"The warmth of the climate, which influences strongly upon their constitutions, together with the dissolute lives of the men before marriage, are the causes of much wantonness and dissipation among the women.

"Marriages are always made at Batavia on Sundays, yet the bride never appears abroad before the following Wednesday evening, when she attends divine service; to be sooner seen in public would be a violation of the rules of decorum.

"As soon as a woman becomes a widow, and the body of her husband is interred, which is generally done the day after his decease, if she be but rich, she has immediately a number of suitors. A certain lady, who lost her husband while I was at Batavia, had, in the fourth week of her widowhood, a fourth lover, and, at the end of three months, she married again, and would have done it sooner, if the laws had allowed of it.

"Their dress is very light and airy; they have a piece of cotton cloth wrapped round the body, and fastened under the arms, next to the skin; over

it they wear a shift, a jacket, and a chintz petticoat, which is all covered by a long gown or *kabay*, as it is called, which hangs loose, the sleeves come down to the wrists, where they are fastened close, with six or seven little gold or diamond buttons. When they go out in state, or to a company where they expect the presence of a lady of a counsellor of India, they put on a very fine muslin *kabay*, which is made like the other, but hangs down to the feet, while the first only reaches to the knees. When they invite each other, it is always with the condition of coming with the long or short *kabay*. They all go with their heads uncovered; the hair, which is perfectly black, is worn in a wreath, fastened with gold and diamond hairpins, which they call a *condé:* in the front, and on the sides of the head, it is stroked smooth, and rendered shining, by being anointed with cocoa-nut oil. They are particularly set upon this head-dress, and the girl who can dress their hair the most to their liking, is their chief favourite among their slaves. On Sundays they sometimes dress in the European style, with stays and other fashionable incumbrances, which, however, they do not like at all, being accustomed to a dress so much looser, and more pleasant in this torrid clime.

"When a lady goes out, she has usually four, or more, female slaves attending her, one of whom bears her betel-box. They are sumptuously adorned

with gold and silver, and this ostentatious luxury the Indian ladies carry to a very great excess.

"They seldom mix in company with the men, except at marriage-feasts.

"The title of my lady is given exclusively to the wives of counsellors of India.

"The ladies are very fond of riding through the streets of the town, in their carriages, in the evening. Formerly, when Batavia was in a more flourishing condition, they were accompanied by musicians; but this is little customary at present, no more than rowing through the canals that intersect the town, in little pleasure-boats; and the going upon these parties, which were equally enlivened by music, was called *orangbayen*."*

The character of the Spanish colonists of Manila, formed under circumstances equally unfavourable with that of the Dutch of Batavia, is drawn by M. Le Gentil as follows:

"M. l'Oidor, *Villa Costa*, a very worthy man,

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* *Stavorinus's Voyages*, Vol. I. pp. 312–323.—Commodore Roggewein, in 1722, gives a ludicrous and unfavourable account of the Dutch colonists of that time. "His crew," he says, "were contaminated by their example," all the lower sort being as profligate and lewd as it is possible to conceive a people to be, insomuch, that the first question many of them asked of strangers arrived from Europe is, whether they have not brought some new oaths over; and whether they cannot teach them a more lively and extravagant method of swearing.—*Harris's Collection of Voyages*, Vol. I.

with whom I afterwards became very intimate, often said to me, that the Indies were detrimental to morals. He counselled me, if ever I married and had children, not to allow them to go to the Indies. *Two things only*, he added, *form and hold together societies; religion, that is to say, the fear of God; and honour, that is to say, the idea one attaches to this word: that these two things, which we must consider as the* PROPS *of societies, failing, one has no good to hope for from men; that at Manilla these two props were crazy, and very tottering.*

" I cannot here help making one reflection. It is a great pity that so fine a country, which appears to be a terrestrial paradise, where nature seems to be prodigal of her benefits! It is a great pity, I say, that the state of manners make it a habitation unfit for good men.

" It would be difficult to mention a city where the manners are more corrupt than at Manilla; religion is unequal to bridle them. There is, to be sure, an inquisition, but the corruption of manners is not exposed to the censure of this tribunal. One proof of this corruption, the only one of which I can here be permitted to make mention, is the abuse of the baths. The men and women, in fact, bathe there together, a monstrous thing, which all the eloquence of the preachers has not yet been able to reform; and never will this abuse reform itself, as long as there is no police established at

Manilla.* To be sure, the women, when in the bath, keep on their shirts, the men theirs, and their drawers; but this does not prevent indecency, a fact admitted by some women, who have been known to remark, that, on coming out of the bath, the men have their drawers so closely fitted to the body, that one may see the form and colour of the skin; this one can more easily conceive, as the cloth which they use at Manilla to make shirts and drawers of is very fine and transparent. It is true, that to bathe with the women, one must be a relation, or familiar friend; and although this manner of bathing be general, I have known some women who revolted at the custom, and admitted no man into the bath when they were there.

"One enjoys much freedom in the country houses. The custom at Manilla, as in all hot countries, is to take a nap after dinner; for the purpose of this indulgence they stretch many mats on the floor, and all lay themselves down upon them, both men and women, side by side, sleeping as they can. They have likewise at Manilla an admirable secret for bringing about assignations. Every body smokes, women as well as men; they have for this purpose little rolls of tobacco, made expressly for the purpose, from four to five or six inches in length, and about the size of the thumb. This they light

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* The philosopher would have made a very poor legislator!

at one end, and smoke from the other, holding it between the teeth or lips, as done with a pipe. One rarely meets women in the streets, particularly mestizes, without a segar in the mouth. The men, who are in quest of intrigues, have one likewise, but always extinguished ; when they meet a woman who pleases them, they stop her, and ask permission to light their segar ; the woman, without any ceremony, takes the segar and lights it by means of her own. During this time they enter into a conversation, which the woman may continue as long or as short as she pleases. This is evinced by the longer or shorter time she takes to light the segar.

" The preachers declaim much against this custom, but all to no purpose. Moreover, I am inclined to believe, that at the Confessional all matters of this sort, and others which I refrain from mentioning, are treated very lightly, in proof of which, I may add, that at Manilla it is not uncommon to see the priests themselves have children. I there knew a priest, a very regular, and mighty good ecclesiastic, who had two; they were girls of seventeen and eighteen years of age, pretty, and well made ; they were in a convent, and came sometimes to see their father. It was at his own house that I saw them, and made this discovery.

" The inquisition, as I have said, leaves the inhabitants of Manilla to themselves in all matters

of this sort ; and if one does not offend the monks ; if one wear a scapulary, a rosary round the neck ; if one counts it morning and evening, and goes to mass twice a-day, he is excused at Manilla on many points. This is about all the exterior form of worship of the inhabitants.

" The fast during Lent, and at other times, ordained by the church, is, moreover, not very strict at Manilla, for they breakfast, dine, lunch, and sup.

" This custom surprised me in a singular manner at my arrival ; I thought it could only take place at the houses of persons little scrupulous, but I was not long without discovering that the practice was universal.

" I usually passed my evenings at the house of the Father Don Estevan Roxas y Melo. Every house in Manilla has, in the evening, its company or society, which they call *tertulia*. The canon Melo had his ; it was well selected ; the commissary of the inquisition was often there. I soon learnt sufficient Spanish to take a part in the conversation, and to reply to the questions that were proposed to me, as to our manners and customs. About six in the evening, they sound the *Angelus* at the same time in all the churches. The cathedral commences, and at the same moment all the churches repeat it. Every one then repeats the *Angelus ;* passengers are then obliged to stop in the street, at the spot they happen to be in, to recite

it. Immediately after this act of piety, one sees, in the house where the *tertulia* is, the servants making their appearance, carrying each a cup of chocolate, with biscuits in the saucer, which is expressly very large, and every one takes his refreshment. I soon accustomed myself to this habit; often it was my only supper. With respect to the Spanish, the chocolate does not prevent their supping; it is true, that at Manilla they do not sup till ten at night." *

Such is the state of manners and morals generated in the hot-bed of vice and corruption, in which the European character is placed, and it would be a miracle, if any thing better were the result. Under the most favourable auspices, the character of Europeans must suffer some degeneracy and demoralization in so trying a situation as that in which it is placed in the Indian islands; but it is, at the same time, equally certain, that a mild and intelligent government, equal laws, and such a freedom of intercourse as would constantly place before the settlers the wholesome example of manners, formed under circumstances more favourable to virtue than their own, must create a race of men more improved, more intelligent, and more virtuous, than either the existing native or European population.

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* Voyages dans les Mers de l'Inde, par M. Le Gentil.

BOOK II.

ARTS.

CHAPTER I.

USEFUL ARTS.

Intention of the present chapter.—Architecture.—Great variety of dwellings.—No modern architecture of durable materials, and why.—Among the more civilized tribes, two distinct characters of dwellings occur.—Dwellings of the agricultural and maritime tribes.—Nature of materials used for building.—The building called a Pandapa.—*Description of a Javanese palace.—A village and town described.—Varieties of both.—Character and description of the household furniture of the Indian islanders.—A durable architecture never applied by the Indian islanders to works of public utility, and the cause.—Nature of ancient tanks.—Mahomedan buildings dedicated to religion.—Ignorance of the modern Javanese in architecture.—Art of weaving.—Its origin among the Indian islanders.—Manufacture of cotton fabrics acquired from the Hindus.—The labours of the loom, among the Indian islanders, confined to the women, an evidence of barbarity.—Description and character of the process.—Art of dyeing and painting cloth.—Indian islanders taught the use of silk by the Hindus.—Working of metals.—Of*

gold.—Silver, a foreign metal.—Manufacture of iron.—Description of tools.—Peculiar scarcity of iron in the Archipelago, and its consequences.—Chiefly employed in the fabrication of warlike implements.—Manufacture of the subordinate metals.—Carpentery.—Boats and vessels.—Art of fishing.—Its importance and extent among the Indian islanders, and how practised.—In what form fish prepared for use.—Salt.—Manufactured chiefly in Java.—Description of the processes by which it is obtained.—Saltpetre and gunpowder.—General remarks on the arts practised by the Indian islanders.

It is not my object, in the present chapter, to render a laboured detail of each particular art practised by the people of whom I am furnishing an account, but to supply such a general picture as will enable the reader to form a just estimate of their state of social improvement. In rendering this account, I shall follow the natural progress of the arts in the march of civilization, beginning with those that are most simple and necessary.

In this order, *architecture* is the first that presents itself. The wide extent of the Indian Archipelago affords examples of every species of human dwelling, from the thicket or tree, which affords shelter to the savage negroes of the mountains of *the Peninsula* and the cannibals of Borneo, to the comfortable habitation of the Javanese peasant, or the more splendid one which lodges his chief or

MALAY HOUSE.

Drawn by Capt.n George

MALAY HOUSE.

Engraved by W.H.Lizars

Edinburgh. Published by Constable & Co. 1820.

prince. * In so rude a state of society as that which prevails even amongst the most civilized of

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* An example of the variety of their dwellings is afforded in the extraordinary structures of the negroes of New Guinea, of which Forrest gives the following account:—"We anchored about four in the afternoon, close to one of their great houses, which is built on posts, fixed several yards below low water mark; so that the tenement is always above the water; a long stage, supported by posts, going from it to the land, just at high water mark. The tenement contains many families, who live in cabins on each side of a wide common hall, that goes through the middle of it, and has two doors, one opening to the stage towards the land; the other on a large stage towards the sea, supported likewise by posts, in rather deeper water than those that support the tenement. On this stage the canoes are hauled up; and from this the boats are ready for a launch, at any time of tide, if the Haraforas attack from the land; if they attack by sea, the Papuas take to the woods. The married people, unmarried women, and children, live in these large tenements, which, as I have said, have two doors; the one to the long narrow stage that leads to the land, the other to the broad stage which is over the sea, and on which they keep their boats, having outriggers on each side. A few yards from this sea stage, if I may so call it, are built, in a deeper water, and on stronger posts, houses where only bachelors live. This is like the custom of the Batta people on Sumatra, and the Idaan or Moroots on Borneo, where, I am told, the bachelors are separated from the young women and the married people.

"At Dory were two large tenements of this kind, about

the tribes, great and durable monuments of architecture are only consecrated to religion, and to a religion directed by a powerful and artful hierarchy. Such monuments were constructed in Java, as will be seen in the chapter on Antiquities, when the Hindu religion flourished in that country, but the knowledge of this art has ceased with the cause which gave birth to it, and this more improved architecture does not belong to the state of society of the present race of inhabitants. Independent of this, it must occur, that the extreme insecurity of property, resulting from a barbarous condition of social existence, not only prevents the accumulation of the wealth necessary to accomplish objects of private comfort or luxury, but would be sure to prove an obstacle to its display in a form calculated beyond all others to rouse the envy and excite the avarice of despotic power.

It may farther be remarked, that the art of constructing edifices of stone must, in the Indian islands, be looked upon not as one of native growth, but of foreign introduction. In the mild climate of the Indian islands, where the materials

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four hundred yards from each other, and each had a house for the bachelors, close by it; in one of the tenements were fourteen cabins, seven on a side; in the other, twelve, or six on a side."—*Forrest's Voyage*, pp. 95, 96.

of simple but sufficient dwellings occur in profusion, in the bamboos, the palms, and abundant timber every where at hand, it will soon occur that, religion excepted, nothing short of great wealth, luxury, and security, would give rise to the construction of expensive fabrics of masonry.

The ordinary habitations of the more improved tribes of the Indian islands are of two descriptions—those of the maritime—and those of the agricultural tribes. Of the first are those of the Malays, of most of the people of Sumatra, Borneo, and Celebes; of the second, those of the Javanese, Balinese, and others. The first are constructed on posts, and the access to them is invariably by a ladder. In the Malay language *Rumah Tangga*, literally a house with a ladder, means a dwelling house, distinct from a granary or other outhouse. Dampier's description of the houses of the maritime tribes is so faithful and complete, that I shall not hesitate to copy it:—"The manner of building," says he, "is somewhat strange, yet generally used in this part of the East Indies. Their houses are all built on posts, about 14, 16, 18, or 20 foot high. These posts are bigger or less, according to the intended magnificence of the superstructure. They have but one floor, but many partitions or rooms, and a ladder or stairs to go up out of the streets. The roof is large, and covered with palmeto or palm leaves; so there is a clear passage, like a

piazza, (but a filthy one,) under the house. Some of the poorer people, that keep ducks or hens, have a fence made round the posts of their houses, with a door to go in and out; and this under room serves for no other use. Some use this place for the common draught of their houses, but building mostly close by the river in all parts of the Indies, they make the river receive all the filth of their houses; and at the time of the land *floods*, all is washed very clean.

"The sultan's house is much bigger than any of the rest. It stands on about 180 great posts or trees, a great deal higher than the common building, with great broad stairs made to go up. In the first room he hath about 20 iron guns, all saker and minion, placed on field-carriages. The general, and other great men, have some guns also in their houses. About 20 paces from the sultan's house there is a small low house, built purposely for the reception of ambassadors or merchant strangers. This also stands on posts, but the floor is not raised above three or four foot above the ground, and is neatly matted purposely for the sultan and his council to sit on; for they use no chairs, but sit cross-legged, like tailors on the floor."* Buildings of the second description are always constructed either on the level

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* Vol. I. pp. 328, 329.

ground, or on a slightly elevated terrace. This distinction, trifling as it may at first appear, has its origin in the different circumstances under which the two classes exist, and their different state of society. The maritime tribes inhabit the marshy banks of rivers and the sea coast, and for the purposes of health their habitations *must* be raised from the ground. They generally live in a state of greater anarchy and violence than the agricultural tribes, and therefore receive some security from this form of their habitations, for, on retiring to rest, it is the invariable practice to take up the ladder of the dwelling, and thus render it so far inaccessible. The superior salubrity, natural to the well cultivated countries of the agricultural tribes, renders the precaution of building on posts unnecessary, while, in their populous villages, where more tranquillity reigns, the inhabitants receive mutual protection from each other.

The grand materials of the structure of the houses of the Indian islanders are the bamboo, the rattan, the palmetto leaf, and wild grass. The posts which support the house are, according to circumstances, either of wood or bamboo. The walls are made of plaited bamboo flattened, the roof of grass or palmetto leaves; the first most common with the agricultural tribes, the last with the maritime, because the plant is the native of marshy lands, such as they usually inhabit. The beds con-

sist of a fixed frame of bamboos, a little elevated above the ground, and there is generally a partition which divides the accommodation of the parents from those of the children. The house of a peasant, in a populous part of Java, where materials are not the most abundant, will not exceed the value of sixty days' labour.

After the house of the peasant, the most material description of buildings among the Javanese are what are called *Pandapa*, or *Mandapa*, a Sangskrit word, and, therefore, probably this modification of building is of Indian origin. Every habitation of the natives of Java, from the petty chief to that of the sovereign, consists of one or more of those structures; nay, the public halls in the villages and towns are nothing else than such structures, and even the Mahomedan mosques are of the same order. The following is the description of a *Pandapa:* A roof thatched, or occasionally covered with shingles, four-sided, is supported by four wooden pillars. Round this, the most material portion of the building, there is an awning of a few feet in depth, of light materials, supported by moveable props of bamboo. Where privacy is required, the whole is closed in by a temporary paling, and, for convenience, divided into apartments by light partitions. Such a structure is always erected upon a terrace, which, in the humblest kinds, is of simple earth, but, in the better sorts, of flags, or indurated

A Pandopo

House of a Chief

A Granary

Peasants Houses.

JAVANESE HOUSES.

Edinburgh Published by A. Constable & Co. 1820.

mortar. Sometimes the wooden pillars are handsomely carved and painted, and at other times the interior of the roof is similarly carved and ornamented. The principal *Pandapa* of the palace of the sultan of Java, which is his hall of audience, has, for example, the inside of the roof handsomely carved, and painted with a deep vermillion and gold, which produces a very brilliant effect.

In Java, the only structures of masonry worth noticing, except the antiquities to be afterwards described, are the palaces of the native princes, called *Kăraton*, or *Kădaton*, words which, literally interpreted, mean, "the residence of princes." These are in fact walled cities, the palace occupying the centre of the town, and being surrounded on all sides by the habitations of the attendants, retainers, and other followers of the prince, and the members of his family. The empty spaces are occupied by the prince's gardens, by tanks and ponds. The area is intersected by an endless labyrinth of walls, the whole being concealed, at any considerable distance, by a profusion of ornamental and fruit trees. A sketch of these singular structures may be interesting.—The great approach to the *Kăraton* is invariably to the north, and through a square or court of considerable extent, called the *Alun-alun*, a constant appendage of every Javanese palace. It is in this open space that the Javanese sovereigns, once in eight days, in conformity to oriental usage, show themselves to their subjects. Here all tour-

naments are exhibited; here all public processions are made; and here the retainers of the nobles wait while the chiefs themselves pay their respects to the sovereign. A row of Indian fig-trees adorns each side of the square, and in the centre, surrounded each by a wall, are to be invariably seen two spacious trees, of the same description, the space between which is that allotted for public executions. These trees are considered almost sacred, and may be looked upon as remnants of Buddhism, for the Indian fig-tree is consecrated by the followers of that sect. Wherever these trees are found, even in the most desolate parts of the country, we are able to trace the palace or dwelling of some ancient chief or prince. A similar court to the one now described is found, in miniature, to the south side of the *Kăraton.*

After passing through the great square, we arrive at the *Paseban*, a place shaded by a canopy, supported on pillars, and intended to afford temporary accommodation to the nobility, while they await to be summoned into the presence. From the *Paseban*, a spacious flight of steps brings us to the *Sitingil*,* a handsome terrace, in the centre of which is one of the usual *Pandapa.* It is here that the sovereign seats himself at all public festivals, occasions when a degree of barbaric magnificence is displayed, that makes some approaches to those

* Literally, "the high ground."

dreams of eastern grandeur which the mind of an European imbibes from books, but which are soon dissipated by an experience of the tameness of the reality.

From the *Sitingil*, the observer descends, by another stair, parallel to that by which he has entered, and, by a variety of winding passages, is conveyed through a series of gates, and brought, in succession, to the different palaces of the prince, each dignified by pompous epithets, drawn from the copiousness of an exuberant language.

The walls of the most ancient *Kăratons* were constructed of hewn stone, of which we have examples at Prambanan. They were afterwards constructed of an excellent fabric of mortar, as at Mojopahit; in later times of a hewn sandstone, as at Mataram; and the present *Kăratons* are constructed, with little skill, of ill-burnt bricks, and ill-concocted mortar. The only defences of the more ancient seem to have been towers; the more modern, in imitation of European fortresses, have their moats, their bastions, their ramparts, their embrasures, and their parapets. Of the extent of these walled cities we may form some notion by that of the modern one of the sultan of Java, which is three miles round, and contains a population of ten thousand inhabitants. The largest of all was Mojopahit. Between the two opposite gates, the ruins of which still exist, there is a distance of about three

miles, which, if the enclosure was an equal-sided square, would give a circuit of twelve miles. Estimating its population in the same ratio as Yugyakarta, it would therefore have contained not less than one hundred and sixty thousand inhabitants.

The residences of the *Bopatis*, or governors of districts, are, in miniature, counterparts of the royal dwellings. They have their *Alun-alun*, or great court, where they have, on Saturday evening, their tournaments and games; and where, at festivals, their public processions are exhibited. The pair of Indian fig-trees, where the sentence of the law is executed, is seldom wanting to render the parallel complete. *

* The following is the judicious and sensible picture of the architecture of these people, which is given by the philosophical historian of Sumatra:—" In their buildings neither stone, brick, nor clay, are ever made use of, which is the case in most countries where timber abounds, and where the warmth of the climate renders the free admission of air a matter rather to be desired than guarded against; but in Sumatra the frequency of earthquakes is alone sufficient to have prevented the natives from adopting a substantial mode of building. The frames of the houses are of wood, the underplate resting on pillars of about six or eight feet in height, which have a sort of capital, but no base, and are wider at top than at bottom. The people appear to have no idea of architecture as a science, though much ingenuity is often shown in the manner of working up their materials, and they have, the Malays at least, technical terms corre-

The habitations of the Indian islanders are never, as in civilized communities, found single, and inso-

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sponding to all those employed by our house-carpenters. Their conception of proportions is extremely rude, often leaving those parts of a frame which have the greatest bearing with the weakest support, and lavishing strength upon inadequate pressure. For the floorings they lay whole bamboos, (a well known species of large cane,) of four or five inches diameter, close to each other, and fasten them at the ends to the timbers. Across these are laid laths of split bamboo, about an inch wide, and of the length of the room, which are tied down with filaments of the rattan; and over these are usually spread matts of different kinds. This sort of flooring has an elasticity alarming to strangers when they first tread on it. The sides of the houses are generally closed in with palupo, which is the bamboo opened, and rendered flat by notching or splitting the circular joints on the outside, chipping away the corresponding divisions within, and laying it to dry in the sun, pressed down with weights. This is sometimes nailed on to the upright timbers or bamboos, but in the country parts it is more commonly interwoven or matted, in breadths of six inches, and a piece, or sheet, formed at once of the size required. In some places they use for the same purpose the kulitkayu, or coolicoy, as it is pronounced by the Europeans, who employ it on board ship, as dunnage, in pepper and other cargoes. This is a bark procured from some particular trees, of which the bunut and ibu are the most common. When they prepare to take it, the outer rind is first torn or cut away; the inner, which affords the material, is then marked out with a prang, pateel, or other tool, to the size required, which is usually three cubits by one; it is afterwards beaten for some time with a heavy stick, to loosen it from the stem, and being peel-

lated, but always grouped into villages or towns, of greater or less extent. Each cottage in this situation is invariably surrounded by a garden, and shaded by a few fruit or ornamental trees, so that the whole village is as if it were embosomed in an orchard, and the cottages wholly hid from view, the village appearing, to an unpractised eye, no more than a simple grove of evergreens. The assemblage of dwellings thus formed is constantly surrounded by quickset hedges.

A town, even where it consists of many thousand inhabitants, is no more than an aggregate of villages, distinguished by the superior size of the

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ed off, is laid in the sun to dry, care being taken to prevent its warping. The thicker or thinner sorts of the same species of kulitkayu owe their difference to their being taken nearer to, or rather from, the root. That which is used in building has nearly the texture and hardness of wood. The pliable and delicate bark of which clothing is made is procured from a tree called kalawi, a bastard species of the bread-fruit.

" The most general mode of covering houses is with the atap, which is the leaf of a species of palm called nipah. These, previous to their being laid on, are formed into sheets of about five feet long, and as deep as the length of the leaf will admit, which is doubled at one end over a slip or lath of bamboo; they are then disposed on the roof, so as that one sheet shall lap over the other, and are tied to the bamboos which serve for rafters. There are various other and more durable kinds of covering used."—*Marsden's Sumatra*, pp. 56, 57.

public mosque, and characterized by the palace of the chief or prince, and the great court which fronts it. *

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* Sir Stamford Raffles gives us the following favourable picture of a Javanese village:—"The cottages, which I have already described, are never found detached or solitary; they always unite to form villages of greater or less extent, according to the fertility of the neighbouring plain, abundance of a stream, or other accidental circumstances. In some provinces, the usual number of inhabitants in a village is about two hundred, in others less than fifty. In the first establishment or formation of a village on new ground, the intended settlers take care to provide themselves with sufficient garden ground round their huts for their stock, and to supply the ordinary wants of their families. The produce of this plantation is the exclusive property of the peasant, and exempted from contribution or burden; and such is their number and extent in some regencies, (as in Kedu for instance,) that they constitute perhaps a tenth part of the area of the whole district. The spot surrounding his simple habitation, the cottager considers his peculiar patrimony, and cultivates with peculiar care. He labours to plant and to rear in it those vegetables that may be most useful to his family, and those shrubs and trees which may at once yield him their fruit and their shade; nor does he waste his efforts on a thankless soil. The cottages, or the assemblage of huts, that compose the village, become thus completely screened from the rays of a scorching sun, and are so buried amid the foliage of a luxuriant vegetation, that at a small distance no appearance of a human dwelling can be discovered, and the residence of a numerous society appears only a verdant grove or a clump of evergreens. Nothing can exceed the beauty or the interest which such detached masses of verdure, scattered over the face of the country, and indicating each the abode of a collection of happy peasantry, add to scenery otherwise rich,

Such may be considered the usual appearance of the villages of the Indian islanders. Local circum-

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whether viewed on the sides of the mountains, in the narrow vales, or on the extensive plains. In the last case, before the grain is planted, and during the season of irrigation, when the rice fields are inundated, they appear like so many small islands rising out of the water. As the young plant advances, their deep rich foliage contrasts pleasingly with its lighter tints; and when the full-eared grain, with a luxuriance that exceeds an European harvest, invests the earth with its richest yellow, they give a variety to the prospect, and afford a most refreshing relief to the eye. The clumps of trees, with which art attempts to diversify and adorn the most skilfully arranged park, can bear no comparison with them in rural beauty or picturesque effect."—*Raffles's Java*, Vol. I. pp. 81, 82.

Mr Marsden's account of a Sumatran village is, as usual, distinct and faithful:—"The dusuns, or villages, (for the small number of inhabitants assembled in each does not entitle them to the appellations of towns,) are always situated on the banks of a river or lake, for the convenience of bathing, and of transporting goods. An eminence difficult of ascent is usually made choice of for security. The access to them is by foot-ways, narrow and winding, of which there are seldom more than two, one to the country, and the other to the water; the latter in most places so steep, as to render it necessary to cut steps in the cliff or rock. The dusuns being surrounded with abundance of fruit trees, some of considerable height, as the durian, coco, and betel-nut, and the neighbouring country, for a little space about, being in some degree cleared of wood for the rice and pepper plantations, these villages strike the eye at a distance as clumps merely, exhibiting no appearance of a town or any place of habitation. The rows of houses form com-

stances sometimes give rise to varieties and anomalies. If a village, for example, be situated in an alpine or mountainous country, the vegetation is there less luxuriant, and its protection less necessary to the comfort of the peasantry. The site of the village is then generally on the declivity of a hill, and, being besides less obscured by the protection of trees, the dwellings distinctly appear.

The most extraordinary appearances are presented by the towns of the maritime tribes, when situated on rivers of great extent, and in situations peculiarly marshy and swampy. The town of Palembang in Sumatra, and Borneo in the great island which takes its European name from it, are the most remarkable examples of this. Some of the dwellings in such situations are built on elevated stakes, within high-water mark, and others are built on moveable rafts of bamboo, moored to piles driven into the banks of the river. The principal, and,

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monly a quadrangle, with passages or lanes at intervals between the buildings, where, in the more considerable villages, live the lower class of inhabitants, and where also their padi-houses or granaries are erected. In the middle of the square stands the balei or town hall, a room about fifty to an hundred feet long, and twenty or thirty wide, without division, and open at the sides, excepting when on particular occasions it is hung with matts or chintz; but sheltered in a lateral direction by the deep overhanging roof."—*Marsden's Sumatra*, pp. 55, 56.

indeed, almost the sole communication in towns of this nature, is necessarily by water. *

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* Pigafetta, near three hundred years ago, gives us the following faithful picture of the town of Borneo :—" La ville est bâtie dans la mer même, excepté la maison du roi, et de quelques principaux chefs. Elle contient vingt-cinq mille feux ou familles. Les maisons sont construites de bois et portées sur de grosses poutres pour les garantir de l'eau. Lorsque la marée monte, les femmes qui vendent les denrées nécessaires traversent la ville dans des barques."—*Pigafetta*, p. 145.—A missionary, in the Lettres Edifiantes, gives us, in a description of Achin, a beautiful and graphic account of the generality of maritime and commercial towns :—" Imaginez vous une forêt de cocotiers, de bambous, d'anas, de bagnaniers, au milieu de laquelle passe une assez belle rivière toute couverte de bateaux; mettez dans cette forêt une nombre incroyable de maisons faites avec de cannes, de roseaux, des ecorces, et disposez les de telle maniere qu'elles forment tantôt des rues, et tantôt des quartiers separés : coupez ces divers quartiers de prairies et de bois : repandez par tou dans cette grande forêt, autant d'hommes qu'on en voit dans vos villes, lorsqu'elles sont bien peuplées ; vous vous formerez une idée assez juste d'Achen ; et vous conviendrez qu'une ville de ce goût nouveau peut faire plaisir à des étrangers qui passent. Elle me parût d'abord comme ces paysages sortis de l'imagination d'un peintre ou d'un poëte, qui rassemble sous un coup d'œil, tout ce que la campagne a de plus riant. Tout est negligé et naturel, champêtre et même un peu sauvage. Quand on est dans la rade, on n'appercoit aucun vestige, ni aucune apparence de ville, parceque des grands arbres qui bordent le rivage en cachent toutes les maisons ; mais outre le paysage qui est très-beau, rien n'est plus agréable que de voir de matin un infinité de petits bateaux de

Having described the dwellings of the Indian islanders, I shall say a few words respecting the furniture of their houses, and a few will be enough on a subject so limited. The necessary furniture of an European dwelling has its origin in customs totally different from those of the Indian islanders, and in the necessities created by a climate the very reverse of that in which they live. We sit on elevated seats, and, when we eat, must be served on tables of corresponding elevation. They sit and eat on the ground, and require neither chairs nor tables. To protect us from the cold, we require soft and warm beds and thick coverings. All these would be unsupportable nuisances in the climate of the Indian islanders. Their food is served up on salvers, or trays, of wood or brass. Their beds are no more than the slight bamboo floor of the cottage, or, at best, benches of the same flimsy material, on which a mat is laid, with a single small pillow. The peasant retires to rest without undressing, and with the *sarung*, or principal article of dress, wraps himself up, and thus receives some protection from the bites of venomous insects.

In the dwellings of the chiefs there is generally,

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pêcheurs qui sortent de la rivière avec le jour, et qui ne rentrent que le soir, lorsque le soleil se couche. Vous diriez un essaim d'abeilles qui reviennent à la cruche chargées du fruit de leur travail."—Tome I.

in a conspicuous part of the house, a kind of state-bed, rather for display than utility, and which is only used on occasion of public festivals.

Spoons, knives, and forks, they have no use for. A few dishes of porcelain ware, imported from China, are occasionally used as luxuries, but the more ordinary table utensils are of brass. In cooking their simple food, they use shallow iron pans, called *kwali*, imported from China, or pots of a coarse domestic earthenware; and, among the ruder tribes, the never-failing bamboo is employed even for boiling their rice, the green cane resisting the fire sufficiently long to serve for the cooking of one mess of rice.

Such is an account of the furniture of the *dwellings* of the Indian islanders. Climate enables the natives to dispense with much that Europeans term necessaries and comforts, and the poverty which results from bad government, precludes an *indulgence* in articles of luxury.

A durable architecture has never, as already remarked, been applied in Java, or any other country of the Archipelago, to works of public utility. To this day there is not a stone bridge on the whole island; not a sluice of durable materials; no artificial canals or wells; and no tanks, or other public works, to facilitate irrigation. Independent of ignorance and want of skill on the part of the Javanese, the circumstances of the country in which

they dwell discourage the construction of such works. From its hilly nature it necessarily abounds in mountain torrents, against the violence of which the most substantial works would hardly avail at particular seasons. Tanks, wells, canals, and artificial sluices, in the present relation of good land to population, are superfluous in a country abounding in natural rills, the waters of which are easily diverted for the purposes of irrigation, by cheap and temporary embankments, without recourse to those more solid, but expensive means, which the poverty and ignorance of the Javanese peasant could ill supply. In different parts of the island, the relics of three or four tanks are, indeed, still to be traced, but they are of inconsiderable size, and were dedicated to religious purposes, or had for their object to gratify the vanity of some despot. The most considerable is that near the palace of Mojopahit, an oblong square, the area of which is six hundred thousand feet, and the depth about twelve feet.

From the middle of the thirteenth century, architecture was certainly on the decline in Java, as in my account of the antiquities of the island I shall attempt to trace, from its perfection in the more ancient temples, to its decline in those of brick and mortar, and its uncouth and disgusting barbarity in those constructed on the eve of the extinction of Hinduism. Since this last period, not a

single monument deserving notice has been erected. The Mahomedan mosques are coarsely and inelegantly constructed of temporary materials. The monument built as a tomb to the apostle of the western districts, at Cheribon, the Arab sheikh Maulana, though of more durable materials, forms no exception to this observation. Though some Dutch writers affect to commend it, and it be exhibited to the curious with a sufficient air of mystery, it is a most contemptible structure, that in Europe would do no credit to a country church-yard.

The modern Javanese do not even understand the art of turning an arch; and there is no structure, since the introduction of Mahomedanism, in which it is attempted; yet, in all periods of Hinduism, the art was certainly understood. We discover it in every ancient temple; the remains of the gates at Mojopahit exhibit handsome arches, and we have arches even in the uncouth ruins of Suku and Kătto, in the mountain Lawu. To what is this difference to be ascribed? Is the genius of Hinduism more favourable to the art than that of Mahomedanism; or rather, was not the Hindu hierarchy more powerful, improved, and numerous, than the mean and vagrant corps of trading adventurers who propagated Mahomedanism?

The next most important art, in the order I am pursuing, is *the labour of the loom*. The Indian

islanders are clothed with a fabric of cotton, the art of manufacturing which they acquired from the Hindus. Previous, however, to their acquaintance with this more improved manufacture, they were not strangers to the labours of the loom, which the minor races probably acquired from that great Polynesian nation, the existence of which I shall endeavour to prove in the chapter on Languages. The animals of their country afford no fur, and the indigenous plants no down for the fabrication of cloth, but the latter afford an abundant supply of filaceous bark, and it was from this material that their cloths must have been manufactured. As proofs that the Indian islanders were possessed of the art of weaving cloth, and of the probability of that art having been disseminated through the skill of a particular native tribe, I may mention, that the words to *spin* and to *weave*, those which express the *loom*, the *shuttle*, the *woof*, and the *warp*, are all native terms, and nearly the same in all the languages of the Archipelago wherever the art of fabricating cloth by the process of weaving is understood. The loom of the Indian islanders varies essentially from that of the Hindus, but the *rollers* for separating the cotton from the seed, and the *spinning-wheel*, are exactly the same. The latter, as well as the material of manufacture, are known by two Sanskrit names, namely, *jantra* and *kapas*. *Jantra*, it is remarkable, is in the parent language

the common term for machinery. How humble must have been the state of the mechanic arts among the Indian islanders, when their instructors bestowed such a name upon one of the earliest of all mechanic inventions!

Among the Indian islanders, the labours of the loom, and the whole operation which the raw material undergoes, from the moment *it* is brought from the field, until it is fit for apparel, is performed by women, and by women only. This is not only the case among the ruder tribes, where the manufacture is intended for domestic consumption only, but even obtains in those parts of the country where cotton cloths are an article of commerce and exportation. Such has been the state of the art in the early ages of society in every country. The great nations of Asia, the Arabians, the Persians, the Hindus, and the Chinese, have long passed this æra in the arts, and that the labours of the loom are still consigned to women among the Indian islanders, is an unanswerable proof of a rude state of society among them.

The cotton is separated from the seed by a pair of small smooth wooden rollers, revolving in opposite directions. This process is unskilful, and, therefore, tedious and expensive. The picking and carding are little less so. A *picul* of cotton wool, or $133\frac{1}{3}$ lbs., worth eleven dollars, separated from the

seed, costs, before it is spun into coarse thread, 24 dollars. The simple process of dyeing the yarn blue with native indigo costs ten dollars more, and before the same yarn comes out of the loom, in a fabric which is none of the finest, it has cost sixteen additional dollars, or, in all, above 450 per cent. upon the raw material. It takes 200 days labour to separate the above quantity of cotton wool from the seed, 200 days additional labour to prepare it for spinning, and 1000 days to spin it. Of coarse cloth five spans breadth, a cubit is the common day's work of a Javanese weaver. This is a picture of the rude condition of manufacturing industry, of the waste of labour and of time, which results, in an uncivilized stage of society, from imperfection of machinery, from indolence, unskilfulness, and the absence of the subdivision of labour.*

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* The process of weaving, and the rude apparatus with which it is done, are faithfully described by Mr Marsden. "Their loom or apparatus for weaving *(tunun)* is extremely defective, and renders their progress tedious. One end of the warp being made fast to a frame, the whole is kept tight, and the web stretched out by means of a species of yoke, which is fastened behind the body, when the person weaving sits down. Every second of the longitudinal threads, or warp, passes separately through a set of reeds, like the teeth of a comb, and the alternate ones through another set. These cross each other, up and down, to admit the woof, not from the extremities, as in our looms, nor effected by the feet, but by turn-

The Indian islanders are wholly unacquainted with the art of manufacturing fine cloths of any kind; all their fabrics are of coarse, substantial, but durable texture. Neither have they attained the art of communicating to their cottons the brilliant and fixed colours which we admire so much in the fabrics of continental India. Their principal colours are blue and dark red, and they have always a dusky and gloomy hue, totally destitute of any elegance or brilliancy.

Of calico printing they are entirely ignorant, but they have a singular substitute for it. The part not intended to be coloured, or that which forms the ground in a web of cloth, they daub over with melted wax. The cloth thus treated is thrown into the dyeing vat, and the interstices take the colour of the pattern. If a second or third colour is to be added, the operation is repeated on the ground preserved by the first application of wax—more wax is applied, and the cloth is once, or oftener, consigned to the vat. The greater refinement that is attempted, the more certain seems to be the failure. This awkward substitute for print-

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ing edge-ways, two flat sticks which pass between them. The shuttle *(turak)* is a hollow reed, about sixteen inches long, generally ornamented on the outside, and closed at one end, having in it a small bit of stick, on which is rolled the woof or shoot."—*Marsden's Sumatra*, p. 183.

ing costs 100 per cent. at least, on the price of the cloth.

Unskilful as the manufacturing industry of the Javanese is, it generally excels that of the other islanders. The natives of Celebes, and the people of Bali, are the only tribes besides that may be called considerable manufacturers of cloth. There is little or no variety in their fabrics, nor do they, like the Javanese, aim at producing any diversity of manufacture or pattern to gratify the taste or fancy of the consumer. Yet, in consequence of the superior quality of the cottons of those eastern countries, the cloths of Bali and Celebes, for fineness and durability, rank before those of Java or the western countries.

Though the soil of many parts of the oriental islands, and particularly of Java, would seem favourable to the mulberry, and the mildness of the climate in all, would appear highly favourable to that of the silk worm, the branch of industry connected with them has never been cultivated in those countries. In Java, in particular, where the habits of the population, and, above all, the industry of the women, appear so suitable to this description of industry, an experiment deserves to be tried. Under the direction of the indefatigable and enterprising Chinese, it could hardly fail of success.

The Indian islanders, it is evident, were taught the use of *silk* by the Hindus, for the commodity,

both in its raw and manufactured state, is called by every tribe that knows its use by the one name of *Sutra*, which is the pure Sanskrit one for the commodity. The raw material is at present brought from China, and from this the Malay women manufacture a rich thick tissue, more distinguished, however, by the quantity of material which it contains, than by the beauty of the workmanship. Even the gold and silver thread which it contains is brought from China. The manufactured silks of the Javanese are still coarser, and far less elegant.

The Indian islanders, from very early times, appear to have been acquainted with all the useful metals. An examination of their languages points out, that the knowledge of the working of gold, iron, and tin, metals which exist in the country, are native arts, whilst the use of silver and copper, the existence of the first of which is only suspected, and that of the second very limited, they have acquired from the Hindus, as their Sanskrit names distinctly point out. In Sumatra, where copper is chiefly found, I discover that it is generally recognized by a native name, but it is not by this, but the Sanskrit one, by which it is called among the more civilized tribes of the Archipelago, so that the knowledge of it, we may conclude from this fact, could not have been disseminated from a native source.

Gold, which exists in its native state, and abounds in almost every country of the Archipelago, must have been the first of the metals of which the use was acquired. In Java, massy ornaments of this metal, with images of the same, are very frequently discovered. No coins of it have, however, been found, nor do the Indian islanders, in remote times, appear to have applied it to the purpose of a metallic coinage. Of the art of gilding, they appear in all ages to have been ignorant, neither has the metal been applied to the purposes of plate. Its sole application has been to trinkets and ornaments. In the art of manufacturing these, like other rude people, they far surpass their other efforts in the mechanic arts. The filagree work of the Sumatrans is highly curious, but in these cases it may be remarked that all their efforts are imperfect, for while the carved work of an ornament is exquisite, the plain portion is as if it were unfinished, for they are ignorant of the art of burnishing the metal.*

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* The filagree work of the Sumatrans is too curious not to require a distinct account. We have it in the following accurate detail by Mr Marsden:—"There is no circumstance that renders the filagree a matter of greater curiosity, than the coarseness of the tools employed in the workmanship, and which, in the hands of an European, would not be thought sufficiently perfect for the most ordi-

The highest efforts of the skill of the Indian islanders is naturally exerted on gold; on the less

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nary purposes. They are rudely and inartificially formed by the goldsmith *(pandei)* from any old iron he can procure. When you engage one of them to execute a piece of work, his first request is usually for a piece of iron hoop, to make his wire-drawing instrument; an old hammer head, stuck in a block, serves for an anvil; and I have seen a pair of compasses composed of two old nails tied together at one end. The gold is melted in a piece of *prĭuk* or earthen rice pot, or sometimes in a crucible of their own making, of common clay. In general they use no bellows, but blow the fire with their mouths, through a joint of bamboo, and if the quantity of metal to be melted is considerable, three or four persons sit round the furnace, which is an old broken *kwali* or iron pot, and blow together. At Padang alone, where the manufacture is more considerable, they have adopted the Chinese bellows. Their method of drawing the wire differs but little from that used by European workmen. When drawn to a sufficient fineness, they flatten it by beating it on their anvil; and when flattened, they give it a twist, like that in the whalebone handle of a punch ladle, by rubbing it on a block of wood, with a flat stick. After twisting, they again beat it on the anvil, and by these means it becomes flat wire with indented edges. With a pair of nippers they fold down the end of the wire, and thus form a leaf, or element of a flower, in their work which is cut off. The end is again folded and cut off, till they have got a sufficient number of leaves, which are all laid on singly. Patterns of the flowers or foliage, in which there is not much variety, are prepared on paper of the size of the gold plate on which the filagree is to be laid. According to this, they begin to dispose on the plate the larger compart-

valuable and the exotic material of silver they bestow smaller pains. Rude images of this metal,

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ments of the foliage, for which they use plain flat wire of a larger size, and fill them up with the leaves before mentioned. To fix their work, they employ a glutinous substance, made of the small red pea, with a black spot before mentioned, ground to a pulp, on a rough stone. This pulp they place on a young coconut, about the size of a walnut, the top and bottom being cut off. I at first imagined that caprice alone might have directed them to the use of the coconut for this purpose; but I have since reflected on the probability of the juice of the young fruit being necessary to keep the pulp moist, which would otherwise speedily become dry and unfit for the work. After the leaves have been all placed in order, and stuck on bit by bit, a solder is prepared of gold filings and borax, moistened with water, which they strew or daub over the plate with a feather, and then putting it in the fire for a short time, the whole becomes united. This kind of work on a gold plate they call *karang papan;* when the work is open they call it *karang trũs.* In executing the latter, the foliage is laid out on a card, or soft kind of wood covered with paper, and stuck on, as before described, with the paste of the red seed; and the work, when finished, being strewed over with their solder, is put into the fire, when the card or soft wood burning away, the gold remains connected. The greatest skill and attention is required in this operation, as the work is often made to run by remaining too long, or in too hot a fire. If the piece be large, they solder it at several times. When the work is finished, they give it that fine high colour they so much admire, by an operation which they term *sapoh.* This consists in mixing nitre, common salt, and alum, reduced to powder and moistened, laying the composition on the filagree,

however, have been discovered in Java, as well as small coins, showing that the ancient Javanese practised the art of working it.

The more difficult and important art of working iron seems certainly one of native, and not of foreign growth. The word for iron, and its modification steel, are indigenous, and the name of the blacksmith, as well as the terms connected with his art, as *chisel*, *file*, *axe*, *saw*, *bellows*, *nail*, &c. are all native. The whole of these are the same in every language of the oriental islands, from whence may be drawn one of the strongest arguments in favour of civilization having been disseminated throughout from one common source.

Of the implements used by the native artists, the only one which is peculiar, and therefore requires description, is the bellows. I shall give it in the graphic, though quaint language of Dampier, and along with it his whole picture of the state of the mechanic arts among the tribes of the Indian islands.

" There are but few tradesmen at the city of Mindanao. The chief trades are goldsmiths,

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and keeping it over a moderate fire until it dissolves and becomes yellow. In this situation the piece is kept for a longer or shorter time, according to the intensity of colour they wish the gold to receive. It is then thrown into water and cleansed."—*Marsden's Sumatra*, pp. 178, 179, 180.

blacksmiths, and carpenters. There are but two or three goldsmiths; these will work in gold or silver, and make any thing that you desire: but they have no shop furnished with ware ready made for sale. Here are several blacksmiths who work very well, considering the tools that they work with. Their bellows are much different from ours. They are made of a wooden cylinder, the trunk of a tree, about three feet long, bored hollow like a pump, and set upright on the ground, on which the fire itself is made. Near the lower end there is a small hole, in the side of the trunk next the fire, made to receive a pipe, through which the wind is driven to the fire by a great bunch of fine feathers fastened to one end of the stick, which closing up the inside of the cylinder, drives the air out of the cylinder through the pipe. Two of these trunks or cylinders are placed so nigh together, that a man standing between them may work them both at once alternately, one with each hand. They have neither vice nor anvil, but a great hard stone, or a piece of an old gun, to hammer upon; yet they will perform their work, making both common utensils and iron works about ships to admiration. They work altogether with charcoal. Every man almost is a carpenter, for they can work with the axe and adze. Their axe is but small, and so made that they can take it out of the helve, and by turning it, make an adze of it. They have no saws;

but when they make plank, they split the tree in two, and make a plank of each part, plaining it with the axe and adze. This requires much pains, and takes up a great deal of time; but they work cheap, and the goodness of the plank thus hewed, which hath its grain preserved entire, makes amends for their cost and pains." *

The existence of iron ore, of sufficient richness to be worked, on account of the metal, is very limited in the Indian islands; in Java there is absolutely none fit for this purpose. When, therefore, we advert to this circumstance, and to the limited intercourse in ancient times with foreigners, we shall be inclined to consider that the use of iron was rather a matter of luxury than utility; and I am strongly inclined to consider the absence or scarcity of this metal as one of the most efficient of the causes which obstructed the progress of the Indian islanders in civilization. Down to our own time, such has, in general, been the high price of this commodity, that the Javanese do no more than tip their instruments of agriculture with it; and the smallest bit of the metal, when exposed, is as liable to depredation as gold or silver. The high repute in which blacksmiths were held by the Javanese, and the high rank they held, for they were considered rather as a privileged order than as artizans, may be adduced in

* Dampier's Voyages, Vol. I. p. 331, 332.

corroboration of this remark. *Pande*, the word for a blacksmith, in the Malay and Javanese languages, means also *learned* and *skilful*. It is highly improbable that persons employed in ministering to the humbler arts of life should, in a rude state of society, be so particularly honoured without some extraordinary cause. The probability is, that, in ancient times, iron was solely, or almost solely, confined to the purposes of dress and of war. The utility of these artisans in ministering towards favourite passions, was what made the vulgar trade of a blacksmith, in all probability, so much in repute in old times among the Javanese. *

The principal skill of the blacksmith is displayed in the manufacture of the spear and dagger, the native arms of the Indian islanders. It would be superfluous to describe these well known wea-

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* For the high value placed on iron we have abundant testimony. "When they came to bartering, they gave gold, rice, hogs, hens, and divers other things, for some of our trifles of small value. They gave ten *pesos* of gold for fourteen pound weight of iron. One *pesus* is in value a ducat and a half."—*Pigafetta in Purchas*, Book II. p. 40.—"When I asked any of the men of Dory, why they had no gardens of plantains and kalavansas, which two articles they were continually bringing from the Haraforas; I learnt, after many interrogatories, that the Haraforas supply them with these articles, and that the Papua people do not give goods for these necessaries every time they fetch them; but that an axe or a chopping knife given once to

pons, which are more faithfully represented in a drawing than by the most laboured description. The extraordinary demand for the dagger or *kris* has given rise to a subdivision of labour in its fabrication, unknown to any other employment. The manufacture of the blade, of the handle, and of the scabbard, are each distinct occupations. The shape of the kris varies with every tribe, nay, in every district of the same country; and there is, according to taste and fancy, an endless variety, even among the same people. The burthensome exuberance of the Javanese language furnishes us with fifty-four distinct names for as many varieties of the kris, specifying, that twenty-one are with straight, and thirty-three with waving, or serpentine blades! The essential portion of the weapon, the blade, has a handsome and imposing appearance, but is far from being skilfully fabricated. If ever the Indian islanders understood the art of tempering iron, they have now lost it. The kris blade is but a

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Harafora man, makes his land or his labour subject to an eternal tax of something or other for its use. Such is the value of iron; and a little way farther east, I was told they often used stone axes, having no iron at all. If a Harafora loses the instrument so advanced to him, he is still subject to the tax; but, if he breaks it, or wears it to the back, the Papua man is obliged to give him a new one, or the tax ceases."—*Forrest's Voyage to New Guinea*, p. 109.

bit of ordinary iron; and there is not one in a hundred that, when bent, recovers its elasticity.

The Indian islanders have attempted the manufacture of muskets, but with little success; for the lock is a piece of complex machinery, far beyond their skill, and, indeed, has never been executed successfully out of Europe. In the fabrication of the less perfect, but more simple matchlock, they have been more fortunate; and in the armoury of the Raja of Blelling, in Bali, I saw specimens which, for richness and beauty, exceeded any thing of the kind with which my experience had furnished me. The entire barrels were richly inlaid with pure gold, wrought with much art, and some taste, into flowers and festoons, producing a very handsome effect, and rendering the workmanship an object of no small curiosity.

In the tools of the artisan, and the implements of husbandry, iron is but very sparingly used. They cannot fabricate files; the chisel and saw are small and bad, and the axe is still more contemptible. The hoe and ploughshare are merely *tipped* with a little iron, which, in the last, with the Javanese, is frequently cast metal; for they have recently acquired the art of fusing iron in small quantities, in one part of the country; but the application is confined, as yet, to this one purpose.

Copper and tin are seldom used in their pure state, but most commonly alloyed in a kind of

bell metal, which is applied to the purpose of manufacturing musical instruments, and cannon of small calibre, usually for the defence of their shipping. The use of lead is confined to the manufacture of musket bullets. It is designated in the different languages of the Archipelago, by some adjunct, which implies, in the opinion of the natives, a modification of tin; and it seems not to have been known to the Indian islanders, until, along with the use of gunpowder, they acquired it from the Europeans. Quicksilver, though known by name, is not used, as far as I am acquainted, in any of their arts; for, of gilding and plating they are ignorant, and equally so of the manufacture of mirrors, and they have no ores of silver to be smelted with it.

The working of wood is an art in which no rude people have ever made any progress, and perfection in it is of much later attainment than in the fabrication of the precious metals. The most brilliant fancy woods attain no lustre in the hands of the native workmen of the Archipelago, and are hardly to be recognized as the same materials, when worked up by the cabinetmakers of Europe. The handsomest specimens of native manufacture of this sort are the kris handles and betel boxes, and some curious carved work is now and then displayed in the pillars which support their *Pandapas*. A considerable share of barbaric magnificence is also dis-

played among the great, in their state beds, which, as well as being curiously carved, are gaudily gilt and painted; but for the two last ornaments, the natives are indebted to the ingenuity of the Chinese, who are always the workmen.

The most considerable exhibition of carpentry is displayed in their boats and shipping. Of these there exists an endless variety, from the smallest canoe, hollowed out of the trunk of a tree, for the navigation of the rivers, to vessels of forty and fifty tons, which navigate the Archipelago from one extremity to the other. The variety, in form and construction, is not less remarkable. Those of each separate nation or tribe have a distinct character, and the vessels of the same tribe, sometimes on principle, but oftener from caprice, are very various. The smaller class of vessels are usually safe and swift, and may be considered extremely well adapted to their purposes. As they become larger they become unsafe and dangerous, and the failure of the native architect is constantly proportionate to the magnitude of his attempts. The materials of ship-building are so abundant and so excellent, that the Archipelago is, from this among many other causes, admirably suited, when its population shall have acquired ingenuity and civilization, to become a great maritime and commercial country. *

* The following account, from Dampier, is a most faithful

There are two arts of the Indian islanders so intimately and immediately connected with the ac-

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picture of the best description of the vessels of the Indian islanders :—" When the sultan visits his friends, he is carried in a small couch, on four men's shoulders, with eight or ten armed men to guard him ; but he never goes far this way; for the country is very woody, and they have but little paths, which renders it the less commodious. When he takes his pleasure by water, he carries some of his wives along with him. The proes that are built for this purpose, are large enough to entertain 50 or 60 persons, or more. The hull is neatly built, with a round head and stern, and over the hull there is a small slight house, built with bamboes; the sides are made up with split bamboes, about four foot high, with little windows in them of the same, to open and shut at their pleasure. The roof is almost flat, neatly thatched with palmeto leaves. This house is divided into two or three small partitions or chambers, one particularly for himself. This is neatly matted underneath, and round the sides; and there is a carpet and pillows for him to sleep on. The second room is for his women, much like the former. The third is for the servants, who tend them with tobacco and betel-nut ; for they are always chewing or smoaking. The fore and after parts of the vessel are for the mariners to sit and row. Besides this they have outlayers, such as those I described at Guam; only the boats and outlayers here are larger. These boats are more round, like the half-moon almost ; and the bamboes or outlayers that reach from the boat are also crooked. Besides, the boat is not flat on one side here, as at Guam ; but hath a belly and outlayers on each side; and whereas at Guam there is a little boat fastened to the outlayers, that

tual condition and history of the progress of society among them, that they will demand details of somewhat greater length than I have thought it necessary to bestow upon the rest. These are the arts of fishing and manufacturing salt, on which the supply of food, and, consequently, the advancement of population and civilization, so mainly hinge, in regions of the nature of those inhabited by the Indian islanders.

The seas of the Indian Archipelago are stored with vast abundance of the finest fish, and the Indian islanders are expert fishermen. There is no art which they have indeed carried to such perfection as that of fishing. The nature of the climate allows them to practise it, with hardly any interruption, from one end of the year to the other.

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lies in the water, the beams or bamboes here are fastened transversewise to the outlayers on each side, and touch not the water like boats, but one, three, or four foot above the water, and serve for the bargemen to sit and row and paddle on, the inside of the vessel, except only just afore and abaft, being taken up with the apartments for the passengers. There run across the outlayers two tire of beams for the paddlers to sit on, on each side of the vessel. The lower tire of these beams is not above a foot from the water; so that, upon any the least reeling of the vessel, the beams are dipt in the water, and the men that sit are wet up to their waste, their feet seldom escaping the water. And thus, as all our vessels are rowed from within, these are paddled from without."—*Dampier's Voyages*, Vol. I. pp. 335, 336.

The fishing-boats proceed to sea with the land-breeze, at an early hour of the morning, and return a little after noon, with the sea-breeze. The principal supply of fish is obtained by drag-nets, and by traps or snares, consisting of inclosures, formed with much labour and skill, by driving stakes or palisades into water of several fathoms deep, on banks much frequented by fish, and to which nets are secured. These are to be seen in great numbers along the north coast of Java, through the straits of Malacca, and in many other situations. Fishing with hand-nets is very frequent. With the hook and line the islanders are less expert than Europeans, as their tackling is less skilfully fabricated.

The river-fish of the Archipelago is neither so good nor so abundant as the sea-fish, and the fishery is generally little practised.

In Java, but, I believe, there only, the salt marshes of the coast have, in many situations, been embanked for rearing and feeding sea-fish, and these afford a large supply. I imagine the practice may have been introduced from China, or some of the countries lying immediately to the west of that empire. In these ponds or marshes the fish are easily taken for use with a hand-net.

River-fish are taken in various ways,—by drag-nets,—by temporary dams of stakes,—and occa-

sionally they are speared, or stupified by casting into the water some narcotic plant. *

It is not the practice of the Indian islanders to eat their fish in a fresh state. It is almost always, with a view to economy, salted and dried. In this form it is not only consumed in large quantities by the inhabitants of the coast, but forms a great article of internal commerce, and is transmitted, in the course of traffic, throughout the whole Archipelago.

There is one mode of preparing and using fish, of so peculiar a nature, but so universally in use, that it is worth a detailed description. This preparation, called by the Malays *blachang*, and by the Javanese *trasi*, is a mass composed of small fish, chiefly prawns, which has been fermented, and then dried in the sun. This fetid preparation, so nauseous to a stranger, is the universal sauce of the Indian islanders, more general than soy with the Japanese. No food is deemed palatable without it. That it has peculiar merit is unquestion-

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* "They steep the root of a certain climbing plant, called tuba, of strong narcotic qualities, in the water where the fish are observed, which produces such an effect, that they become intoxicated, and to appearance dead, float on the surface of the water, and are taken with the hand. This is generally made use of in the basons of water, formed by the ledges of coral rock which, having no outlet, are left full when the tide has ebbed."—*Marsden's Sumatra*, p. 186.

able, for foreigners soon become as partial to it as natives, and its use extends to every country of the tropics from China to Bengal. Dampier describes it with perfect accuracy, as follows: "Balachaun is a composition of a strong savour, yet a very delightsom dish to the natives of this country. To make it, they throw the mixture of shrimps and small fish into a sort of weak *pickle*, made with salt and water, and put it into a tight earthen vessel or jar. The pickle being thus weak, it keeps not the fish firm and hard, neither is it probably so designed, for the fish are never gutted. Therefore, in a short time they turn all to a mash in the vessel; and when they have lain thus a good while, so that the fish is reduced to a *pap*, they then draw off the liquor into fresh jars, and preserve it for use. The masht fish that remains behind is called balachaun, and the liquor poured off is called nuke-mum. The poor people eat the balachaun with their rice. 'Tis rank scented, yet the taste is not altogether unpleasant, but rather savory, after one is a little used to it. The nuke-mum is of a pale brown colour, inclining to grey, and pretty clear. It is also very savory, and used as a good sauce for fowls, not only by the natives, but also by many Europeans, who esteem it equal with soy." *

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* Dampier's Voyages, Vol. II. p. 28.

Java is the only country of the Archipelago in which the manufacture of salt is carried on to any extent. The processes by which the Javanese obtain salt are not complicated operations, demanding a refined exercise of skill, care, and ingenuity, but a simple art, well suited to the people who practise it. In situations on the flat north coast of the island of Java, where the soil is of a clayey nature, and free from dark loam, both requisite qualities towards the success of the process, the salt water is admitted through a succession of shallow square compartments, in each of which it receives a certain degree of concentration, until arriving at the last, the water is completely evaporated, and the salt left behind, requiring no farther preparation, but fit for immediate use. The salt thus obtained, though discoloured by admixture with some adventitious ingredients, is remarkably free from those septic, bitter, and deliquescent salts, consequent to a more hasty evaporation. This manufacture goes on during the whole of the dry half of the year. To the success of the operation it is, as already mentioned, necessary that the soil should be of a clayey nature, to obviate absorption; that the shore should be flat and extensive, to give easy admission to the brine; and that high mountains should be at a distance, that the process may not be rendered difficult or precarious by the heavy rains that are consequent to their vicinity. It is

the absence of this combination of favourable circumstances, which renders the manufacture of salt impracticable in most of the other countries of the Archipelago.

On the boisterous south coast of the island of Java, the shelving nature of the shore, and the porous quality of the soil, will not admit of the practice of the cheap process now described, and the natives have recourse to another, which, as it is altogether singular, may be worth describing. The sand on the beach being raked, and smoothed into the appearance of ridges and furrows, as if intended for cultivation, the manufacturer having filled a pair of watering-cans from the surge, runs along the furrow, sprinkling the contents in a shower upon the ridges. In a few minutes the powerful effects of the sun's rays have dried the sand, which is then scraped together with a kind of hoe, and placed in rude funnels, over which is thrown a given quantity of salt water, by which a strong brine is immediately obtained. The peasants transport this brine to their hovels, where it is boiled, in small quantities, over an ordinary fire, and a salt is obtained, which is necessarily impure in consequence of the haste with which the operation is performed. This inferior salt costs fourfold as much as the better product of the north coast.

The process of manufacturing *saltpetre* and *gunpowder* will demand a short account. Saltpetre is

obtained by boiling the soil of caves frequented by bats and by birds, chiefly swallows. This soil is the decomposed dung of these animals, which commonly fills the bottom of the caves to the depth of from four to six feet. * The supply thus obtained is precarious and limited, and the cost of the nitre consequently high. The commodity may always be more cheaply imported from Hindustan than manufactured. No country, indeed, can vie with the continent of India in the cheapness and facility with which saltpetre is produced, for the climate disposes to the ready formation of the salt, and the soil employed has in itself the extraordinary powers of reproduction. From this circumstance, it happens, that while most other productions of the soil are to the full as cheap in Java as in Bengal, saltpetre is $3\frac{4}{5}$ times dearer; for a hundred weight is produced in the former country for $1\frac{2}{5}$ Spanish dollars, and in the latter costs $5\frac{2}{5}$.

Native sulphur is found in all the pseudo-volcanoes of the Indian islands, in great purity and abundance, and there is no want of the proper woods for charcoal. The high price of the principal ingredient, saltpetre, however, and the rude-

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* "A cubic foot of this earth, measuring seven gallons, produced, on boiling, seven pounds fourteen ounces of saltpetre, and a second experiment gave a ninth part more."—*Marsden's Sumatra*, p. 173.

ness of manufacturing industry incident to the state of society among the islanders, are sufficient to explain the high price and unskilful manufacture of gunpowder among them. Gunpowder is, indeed, one of the most highly-prized of the European articles of import, which fact, in a word, explains the imperfection of their own. I have no doubt that the Indian islanders were instructed in the manufacture of gunpowder either by the Arabs or Europeans, or at least that it is not of native invention. The compound word which expresses it is the same in every language of the Archipelago—is not like parallel words of as general use, one of the great Polynesian dialect, but a Malayan word, that is, a word of the language of that people with whom the western nations had their principal and earliest intercourse. *

Of the arts practised by the Indian islanders, I have now furnished sufficient examples to enable the intelligent reader to form a competent judgment; to be more particular, would involve me in trifling details, which would serve no purpose but to tire his attention. It will be seen, that, in the

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* The word is *ubat-bădel*, which may be literally translated gun materials. *Ubat*, in the Malay language, means medicine, remedy, and materials, or ingredients; but in the other Polynesian languages it has no signification but in its compounded form expressing gunpowder.

arts which minister to the mere necessities of life, and in those which are calculated to gratify the unrefined vanity of semi-barbarians, they have made considerable progress. They raise a plentiful supply of food: holding the nature of the climate in view, they are not ill housed; and their skill in jewellery enables them to supply themselves with such trinkets as suit the taste of a semi-barbarous people. As is always the case in a state of society, where the degree of tranquillity and freedom do not exist which render the public the best patron of the skilful artisan, the most ingenious artists are always found to be retainers of the great.* Like all men in this state of civilization, they are excellent imitators, and copy with astonishing accuracy. It would be difficult, for example, to furnish a Javanese with any specimen of European work in gold or silver, which he would not imitate with great precision, sometimes, indeed, with such nicety, that it would almost baffle the skill of an experienced artist to discover any difference between the copy and original. This accuracy of imitation, however, it must be remarked, is confined to labour purely mechanical, for when any application of principles is required, or when

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* "The king of Achin," says Beaulieu, "entertains three hundred goldsmiths in his castle, besides a great many other artisans."

the use of nice tools is implied, their failure is complete. Their cabinet work, in imitation of that of Europeans, is never fully finished; they cannot make a good lock; they cannot temper steel or iron, and, therefore, their cutlery is rude to the last degree. They do not seem ever to have been acquainted with the manufacture of glass. I remember having once seen two antique Hindu images of this material, found in Java, but never heard of any other specimens of the same kind, and must conclude they were brought from the continent of India as rarities. It is more surprising to find the Indian islanders ignorant of the cutting or polishing of the precious stones. Their diamonds are cut for them by the natives of Coromandel, and the rubies and sapphires, which they often wear, they always use in their rough state.

With all these defects, defects inseparable from their condition in society, the Indian islanders have, as labourers and artists, many valuable qualities. They are persevering and docile, have robust frames, and are happily devoid of that incurable bigotry, in the use of their own tools, and the application of their own processes, which characterize the natives of India. European saws, chisels, planes, and axes, are readily used by the Javanese artisan, and even day-labourers and husbandmen do not refuse to work with European implements

when their superiority over their own is made obvious to them. With this nation at least, we might therefore expect, under favourable circumstances, a progressive improvement in the mechanical arts.

CHAPTER II.

DRESS.

Division of the subject.—Original dress of the Indian islanders.—Taught to clothe themselves in cotton fabrics by the Hindus.—Enumeration of the principal portions of dress.—Varieties.—Ornamental portions of dress.—Mode of wearing the hair.—Fantastic practices for improving the natural beauty of the body.—Practice of blackening and filing the teeth.—Of flattening the head, distending the lobes of the ears, &c.—Use of cosmetics, with the view of improving the complexion.

UNDER the head of Dress must not only be included the manner of clothing for necessity or comfort, but such fantastic and extravagant practices as the Indian islanders have recourse to, with the view of embellishing or beautifying their persons. I shall consider this curious subject under three heads. 1. Such parts of dress as are connected with utility or comfort; 2. The extrinsic portion of dress which relates wholly to vanity or luxury; and, 3. I shall treat of the fantastic practices to which the Indian islanders have recourse, with the view of improving the natural beauty of the human body.

Most of the savage tribes of the Archipelago go in a state of perfect nakedness, with the exception of that slight covering which human nature is no where so wanting in delicacy as not to suggest the propriety of supplying. Children of both sexes go entirely naked every where to the age of six and seven years. For such a covering as the rude savage requires, the forests of a tropical climate afford abundant and obvious materials. The original clothing of all the inhabitants of the Indian islands was probably the bark of a tree, cut and dressed into the form of cloth, the same that is in universal use among the South Sea islanders, and which we term Otaheitean cloth. Though such clothing has generally given way to the use of cotton cloth, traces of it may still be found among some of the less improved and more primitive races.

Before the Indian islanders understood the use of cotton in the fabrication of clothing, I think it not improbable, as I have stated in another place, that they manufactured cloth in the loom of the filaments of some of their native plants. I am led to form such an opinion from the great variety of such plants which exist in the Archipelago, and by a reference to the various dialects of the people, which prove, that all words directly connected with the process of weaving are native, and not exotic terms. The plantain, or banana tree, most probably afforded the principal

material of such fabrics. To this day the fibrous matter of the plantain is manufactured into cloth in the Philippines, and the humbler classes are there chiefly clothed with it.

The cotton plant, and the knowledge of the fabric wove from its wool, were, beyond doubt, introduced into the Archipelago by the Hindus. Cotton now affords the grand material of the dress of the Indian islanders every where.

With respect to the habit or garments of the Indian islanders, two general remarks may be premised. In character, their dress is neither the tight, close, neat habit of the Europeans, nor the loose flowing robe of the Asiatic nations of the continent, but a sort of medium between the two. It certainly wants the grace and elegance of the latter. The principal portions of dress are nearly the same for both sexes.

The earliest, and most indispensable portion of dress, the covering of the waist and loins, is still the most important. One description of it is nearly universal among all the tribes of the Archipelago, and is common to both sexes. This is what, in the Malay language, is called a *sarung*, a word which literally means a covering or envelope, and, in fact, describes its use. It is a piece of cloth, generally coloured, six or eight feet long, and three or four feet wide, usually sewed at both ends. This sort of petticoat, which is common to

both sexes, is of the same breadth above and below, and is not secured to the body by any permanent contrivance, but the upper part being contracted to the size of the waist, the superfluous portion, as occasion requires, is twisted with the hand, and tucked in between the rest of the garment and the body of the wearer. With the Javanese, this portion of dress, which they designate by the words *băbăb* and *dodot*, is not secured at both ends, but occasionally exposes the legs in walking, and falls in a drapery down to the ancles. The tribes of Sumatra and Celebes consider it a scandal to expose the knee, and with them it is always sewed at both ends. When the latter wear, as they generally do, a kind of short breeches, they occasionally disengage the *sarung* from the loins, and throwing it transversely over one shoulder, use it in the manner of a Scots Highlander's plaid.

This principal portion of dress is not the only one worn as a covering for the lower part of the body. The Malay nations usually wear a pair of thin drawers, and the Javanese, occasionally, either a pair of similar drawers, which fall a little below the knee, called *panji-panji*, or a pair of loose pantaloons, like those of the Mahomedans of Hindustan, called *chălana*. These portions of dress belong only to the male sex, and over them the *sarung* or *dodot* is always worn. The various portions of dress now enumerated are usually fixed

by a zone or sash, commonly of silk, the manufacture of the country, from the raw produce of China, or imported ready made, under the appellation of *chinde*, from the peninsula of Hindustan.

The second great portion of dress is the *coat*, called by the Malays *baju*, and by the Javanese *kălambi* and *rasukan*. It is of more various forms than the preceding article, but may generally be described as a frock with sleeves, longer or shorter, according to the sex or nation of the wearer. It seldom reaches below the hips, with the Javanese men, and it has a row of buttons in front, and with the women of the same tribe, it is open only at the neck, slipping over the head in putting it on. With the Malays of both sexes the *baju* is entirely open in front.

The waistcoat of the man, or bodice of the women, is of considerable variety. The Malay one is, with the men, a tight vest, with a row of buttons from top to bottom,—with the women a plain unopen vest, intended to afford concealment and some protection to the bosom. The *sarung* very frequently covers the latter, reaching to beneath the arms. With the male sex this portion of dress is generally altogether wanting among the Javanese, and the women of that nation supply its place by a piece of cloth called a *kămban* rolled round the body and over the breasts, in such a manner as to depress and ultimately to disfigure them. The

Sundas, or inhabitants of the western mountains of Java, leave the bosom entirely naked, and experience neither shame nor scandal from being seen in this state of exposure.

The ancient practice of the Indian islanders with respect to the head, appears to have been to leave it uncovered; the Balinese still adhere to this practice. The Mahomedan tribes invariably wear a slight covering in imitation of the turban of the western nations. It is, as its name * implies, a small handkerchief, which usually leaves the crown of the head bare. On journeys a wide umbrella hat is frequently used by all classes to protect them from the sun.

The legs are always bare with both sexes, and very commonly the feet too, though now and then, in imitation of the Arabs, the men, among some of the western tribes, wear sandals.

The Javanese, as in other matters, take the lead in dress, and with them its refinements and extravagancies are carried to the greatest excess. Besides their every day's wear, they divide the male dress into three descriptions, which they respectively denominate *rajaputran*, or the royal dress, *pasowanan*, or the court dress, and *prajuritan*, or the war dress. The first is used by the sovereign on festive occa-

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* "*Saputangan*, handwiper."

sions, but by all persons of inferior condition only when bridegrooms. The second is used by courtiers when in the royal presence, and the third by persons of rank when they go abroad, or on journeys, &c. In the royal or court dress, the upper part of the body is bare, and smeared over with a yellow cosmetic, and a profusion of gold ornaments is, in defiance of Mahomedan precept, worn on the arms, wrists, breast, and head. Their long hair is then thrown down over the back in a loose twisted form, a peculiar head dress, being a modification of the cowl worn by the Arabs, is used. This is a light cylindrical cap, of five or six inches high, and frequently of white cloth stiffened with starch, so as to be translucent.

The adventitious and purely ornamental portions of dress among the Indian islanders consists of flowers,—of gold ornaments,—and of diamonds. Pearls are never worn by them, and the other gems very rarely, except in finger-rings. Silver ornaments are held in very little esteem. Gold is worn in the form of finger-rings, of bracelets, armlets, ear-rings, and in that of plates for the breast and forehead; most of these, however, only on festive occasions.

Among the men, it appears to have been the ancient practice of all the races to cut the hair short, and the Balinese still continue to do so.

Having no covering for the head,* and the coarse strong hair natural to them, standing erect like bristles, the men of this tribe have a ferocious and forbidding look. Among the Javanese, both men and women take a pleasure in cultivating the hair. It is, indeed, the chief object of attention among the women, with whom it is bound in a knot behind the head, called a *gălung*. In full dress, the hair is interwoven with flowers, which swell the whole to an extravagant size. Wreaths of flowers are, on such occasions, suspended from the ears and other parts of the head. The flowers used at such times are the *mălati*, or Arabian jessamine, and the *chămpaka*, both of which, in Java, in the vicinity of large towns, are extensively cultivated for the purpose.

Of the extrinsic portions of dress, the *kris* must not be omitted. It is invariably worn by the men of all ranks, whether dressed or undressed. In full dress two are often worn, and sometimes three, and even four. The value and beauty of the weapon is a test of the rank or wealth of the wearer. Sometimes the wooden sheath has no covering, and in the progress of rank and riches it will have one of copper, of silver, of *suasa*, of pure gold, and of the latter metal set with diamonds.

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* A small white fillet is worn round the head as the signal of hostility, but on no other occasion.

Among articles of dress, though not immediately appended to the person, may be included the indispensable ones of the betel-box, and the umbrella, the latter, according to its quality or colour, being the chief mark or order of office or nobility.*

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* In Drake's voyages in Purchas, we have the following very curious and accurate picture of the costume and rude magnificence of the islanders. It is the king of Ternate who is described:—"The king at last came in, guarded with twelve launces, covered over with a rich canopie, embossed with gold. Our men, accompanied with one of their captaines, called *Moro*, rising to meet him, hee graciously did welcome and entertaine them. Hee was attyred after the manner of the countrey, but more sumptuously than the rest. From his waste downe to the ground was all cloth of gold, and the same very rich: his legges were bare, but on his feet were a payre of shooes, made of cordovant skinne. In the attyre of his head were finely wreathed hooped rings of gold, and about his necke hee had a chayne of perfect gold, the links whereof were very great, and one fold double. On his fingers hee had six very faire jewels, and sitting in his chayre of estate, at his right hand stood a page with a fanne in his hand, breathing and gathering the ayre to the king. The fanne was in length two foot, and in bredth one foot, set with eight saphyres, richly embroydered, and knit to a staffe three foot in length, by the which the page did hold and moove it. Our gentlemen having delivered their message, and received order accordingly, were licenced to depart, being safely conducted backe againe by one of the king's councell."—*Purchas's Pilgrims*, Vol. I. Book 2. pp. 55, 56.

Of the extravagant practices to which the Indian islanders have recourse, with the view of improving the natural beauty of the human form, the most remarkable and universal is that of *filing* and *blackening* the teeth. With the first tribe that practised it, it had its origin, no doubt, in that absurd propensity of all savages, to attempt to improve the natural form of the body by their own absurd and extravagant efforts. This particular modification of the practice is, however, so arbitrary in its character, that it must, like many other common customs of the Indian islanders, be looked upon as the institution of the same tribe which spread its language and civilization over the whole improved nations of the Archipelago. Barbarous as it may appear to us, it is very probable that it was considered, in the progress of improvement, as a mark of *civilization*. None of the savage tribes, whose languages have little or nothing in common with those of the civilized nations, observe the custom of filing and blackening the teeth. *

The teeth are filed and blackened at the age of puberty, and the operation is a necessary prelude to marriage. When they would tell us that a girl has arrived at the age of puberty, the common ex-

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* The custom of blackening the teeth is common to the Indian islanders with many of the nations of the Continent, but that of filing them is peculiar and national.

pression is, " She has had her teeth filed." The practice, as far as regards the men, is equivalent among us to throwing aside the boy's dress, and assuming that of the man, and with the women, to that perhaps of our young ladies making their first appearance at public places. The ceremony with the young women is often delayed for a year or two, when there is no immediate prospect of a match for them.

The operation is confined chiefly to the upper canine teeth, the edges of which are filed down, and rendered perfectly even, while the body of the tooth is rendered concave. The *patient* is thrown, for this purpose, on his back, and an old woman, by a very tedious, and rather a painful process, grinds the teeth into the desired form with a bit of pumice-stone. An indelible black is easily given, after the loss of the enamel, by the application of an oily carbon, procured by burning the shell of the cocoanut. The two middle upper canine teeth are left white, and sometimes covered with a plate of gold, the contrast which they form, in either case, with the jet black of their neighbours, being looked upon as *highly becoming*. A few individuals, more whimsical than the rest, have the teeth filed into the appearance of a saw.

Habit has rendered the filing and blacking of the teeth so familiar to those who practise it, that they look upon it as a real beauty, and white teeth,

which they would otherwise possess in perfection, are in great disesteem. They will sometimes express their contempt of white teeth by saying, that "men ought not to have teeth like those of dogs or monkeys;" and it may indeed be suggested, as a thing not improbable, that the first institution of the practice may have had its origin in a rude effort of improvement, on the part of the first savage tribe that began it, to distinguish itself from the beasts of the field, and those ruder savages than themselves, who nearly resembled the former. After the young sultan of Java had had his teeth duly filed and blackened, according to custom, one of the chiefs asked me, with perfect earnestness, if I did not think his highness's looks *very much improved?* and was surprised that I did not agree with him. When the elder son of the chief of Samarang, one of the very interesting youths who were educated at Calcutta, visited Bali, the rajah of Blelleng, one of the sovereigns of that island, was informed of the circumstance, and asked his opinion of him. He approved of his looks, manners, and conversation, but added, "it was a thousand pities his teeth were white."

Of the universal practice of savages of staining the skin to improve the beauty, or to give, in the opinion of those who follow it, a more terrible aspect to the warrior, there are not many relics among the civilized nations of the Archipelago.

In the Philippines, the practice of tattooing appears to be still continued, and was at one time so frequent, that the Spaniards gave to some islands of the group, from this circumstance, the name of the *Pintados*, or islands of painted men.

Of practices of the same nature, less general, I may mention that of some tribes of flattening the noses and compressing the foreheads of infants while the bones are yet cartilaginous; the practice of distending the lobes of the ears to a monstrous size, and that of permitting the nail of one or more fingers of the hand to grow to an extravagant length, in imitation of the Chinese nations. None of these practices are general, and among the more civilized tribes all of them appear to be falling into disuse. The Javanese, for example, ridicule, and consider as a deformity, the enormously distended apertures in the lobes of the ears of the women of Bali. It is not improbable that, in the course of a little more civilization and refinement, the absurd practice of filing and blackening the teeth will also be abandoned.

The use of a coloured cosmetic to improve the complexion is still continued by all the civilized tribes, on festive occasions. Upon all occasions of state and ceremony, the Javanese of both sexes have the face and upper part of the body, and limbs, (as far as their feelings of delicacy will permit them to expose them,) covered with a yellow

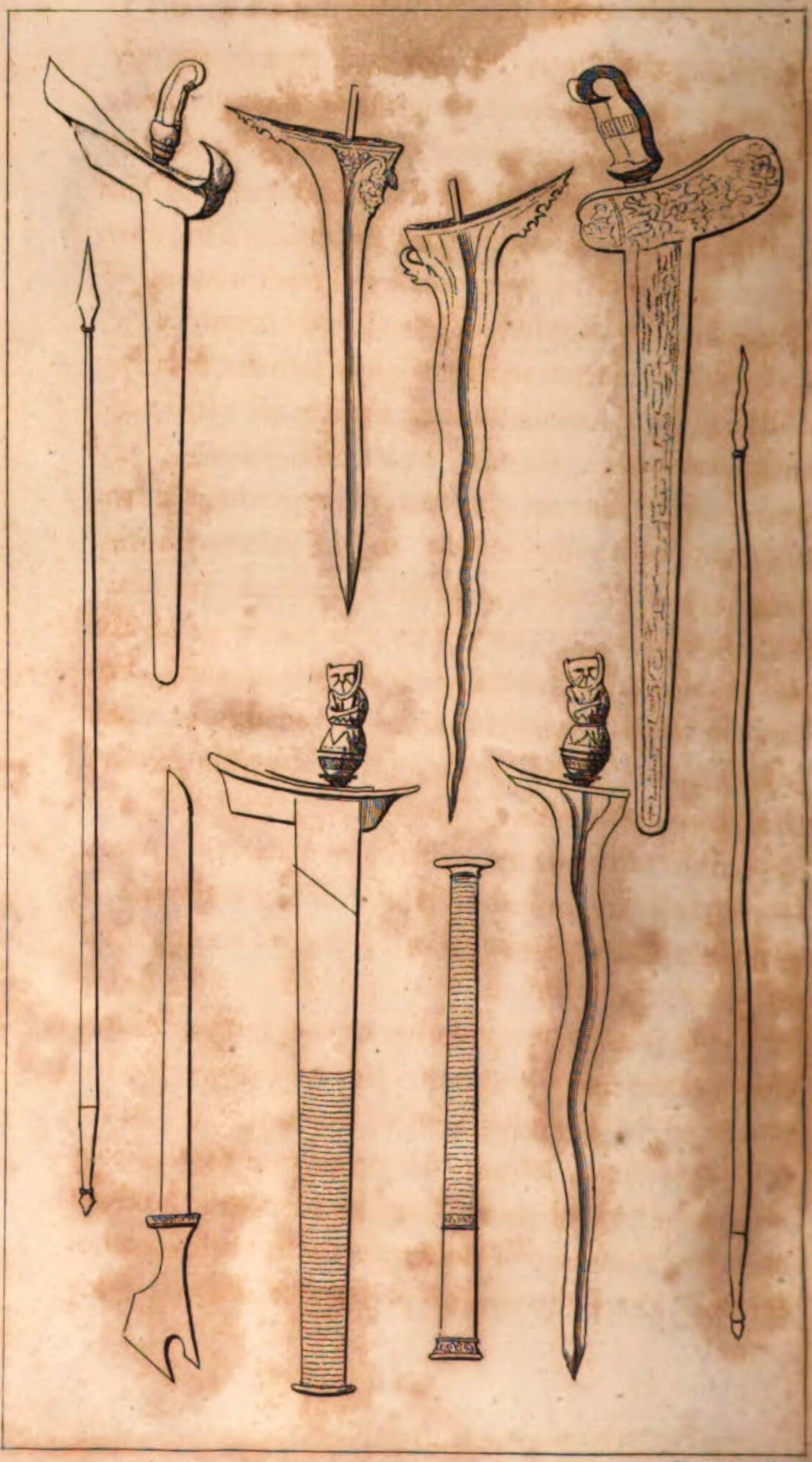
cosmetic, applied in a fluid form, consisting of orpiment and perfumed flowers. Many of those portions of dress used on common occasions are discontinued on these, and we may truly say of the Javanese, that, when in full dress, they are almost naked.

CHAPTER III.

ART OF WAR.

Mode of conducting wars among all savages nearly the same.—Civilized tribes may be described as an armed population.—Native weapons.—Poisoned weapons.—Use of the bow and arrow, and of the sling.—The spear.—The kris.—The sword.—Fire arms.—Cannon.—Small arms.—Military character of the country inhabited by the Indian islanders, and how it affects their mode of conducting wars.—Different descriptions of military force.—Modes of levying troops.—Of declaring war and organizing the military force.—Mode of fighting.—Mode of provisioning the army.—Conduct towards the dead, wounded, and prisoners.—Anecdotes in illustration.

THERE is so little diversity in the mode of conducting wars among communities in the lowest stages of civil existence in every part of the world, that an account of it among one or two tribes is an account of it among all. We are familiar with the disgusting picture, as it presents itself among the savages of America, and I rest satisfied, that the hostilities of the savages of the Indian islanders, did we possess the most intimate knowledge of them, would afford very little variety. This



Engraved by W.H.Lizars

WARLIKE WEAPONS.

Edinburgh. Published by Constable & Co. 1820.

knowledge, however, we do not possess in any authentic degree, for the peculiar circumstances under which we are placed, with relation to the least improved portion of the inhabitants of the Indian islands, deny us the means. They are driven to a distance from us, by the persecution of their more powerful and civilized countrymen, and the peculiar ferocity of the manners of most of them is calculated to discourage all peaceable intercourse with them. For these reasons, my account of the art of war among the Indian islanders will refer chiefly to the more civilized nations, and I shall only make occasional reference, for illustration, to the art as it is managed by the savage tribes. This subject may be arranged under the six following heads,—an account of their weapons,—of their mode of levying troops,—of the provisioning and internal management and discipline of the army,—of their mode of fighting, —of their treatment of the dead, wounded, and prisoners,—and, lastly, of their use of the right of conquest.

There is no tribe or nation of the Indian islands that has made such advance in social order, and is possessed of a government of such vigour and intelligence, as to afford such protection to the lives and properties of its subjects, as to exonerate them from the necessity of bearing arms in their own defence. From the age of puberty to death, every

male is armed to protect himself, his family, and dwelling, and such is the inadequacy even of this precaution, that the inhabitants are compelled, for mutual protection, *always* to associate in villages. The inhabitants of the Indian islands are strictly, then, an armed population.

Among the savages of all nations, we find the use of the club, the sling, and the bow and arrow, the first and universal weapons of all mankind. To these the Indian islanders add the tube for discharging arrows, which are sometimes poisoned with a prepared vegetable juice. The Balinese are the only tribe, in any degree civilized, which retains the general use of this practice. The more powerful nations have long given it up, we may presume, rather from an experience of its inefficacy, than from any conviction of the immorality or baseness of the practice. The Javanese historians, in rendering an account of a war conducted by the sultan of Mataram against the people of Bali and Blambangan, as long ago as the year 1639, mention the use of poisoned arrows on the part of the former, as an extraordinary circumstance new to their countrymen, and which excited at first some alarm. The poison made use of on such occasions it is known, by experiment, must be applied in considerable quantity, and for a length of time, even to the smaller animals, to destroy life, and this even where it is most skilfully prepared and most recently used.

When applied after a short exposure to the air, through the wound of an arrow immediately withdrawn, the probability is, that it would not prove fatal to the human frame once out of ten thousand times. In the use of the bow and arrow, and the sling, I do not discover that the Indian islanders have acquired any extraordinary dexterity. The Javanese are extremely fond of the exercise of the bow and arrow as an amusement, but are any thing but skilful in the use of it, and seldom succeed in throwing the arrow above a dozen of yards. In the attack upon the palace of the sultan of Java in 1812, the Javanese threw stones from slings in great numbers, but without inflicting a serious wound, or even dangerous contusion, in the period of two days.

The knowledge of iron must soon have, in a great measure, superseded the use of these less perfect weapons, and given rise to that of the spear and kris. These may be justly styled the favourite weapons of the Indian islanders. They adorn them in a thousand fanciful ways, and take a pride in wearing and displaying them. A short spear is in use among the Malays, and nations of Celebes, and, occasionally, by the latter, a kind of javelin, for using as a missile weapon. The Javanese wield a more formidable weapon, often twelve, or even fourteen feet long, in the use of which they possess, individually, a great dexterity. I have seen a Java-

nese pierce a full grown tiger, ranging at liberty in a square of considerable extent, to the heart, with a single effort, and without parting with his spear. It is difficult to imagine a more formidable weapon for offence or defence, in the hands of resolute men, taught by discipline to act in concert.

The *kris*, or dagger, is a weapon fitter for assassination than war, though it be quite improbable that its use is to be ascribed to any such origin; neither can we ascribe it, with any propriety, to the partiality of the islanders for a close encounter; for such a supposition is contrary to what we know of *their* mode of warfare, as well as of that of all men in a similar state of society. The use of the kris had, in all likelihood, as mentioned in another place, its rise in a more vulgar, but more effectual cause, the scarcity and dearness of iron, in a country where, without supposing a foreign intercourse, it must have been scarcer and dearer than gold itself. It is not to be supposed, without a cause so adequate, that the Indian islanders, any more than other semi-barbarians, acquainted with the use of iron, would have neglected the useful and formidable sword for the trifling, ineffectual dagger. That the Indian islanders have continued the use of their favourite weapon after the cause has, in a great measure, ceased to operate, need not be attempted to be accounted for, to those who are aware of the obstinate adherence of barbarians

to ancient habit and custom, particularly in an affair in which national pride and vanity are engaged.

The Javanese ascribe the invention of the kris to *Inakărto Pati*, king of *Janggolo*, in the beginning of the fourteenth century of our time, in the chronology of a civilized people a modern æra, but with the semi-barbarians of the Indian islands, the æra of fable and romance; so that the assertion, like that of the Greeks and Romans respecting the plough and the loom, amounts to no more than a declaration of ignorance. The strict adherence to a foreign costume in the sculptures of the more ancient temples of Java, does not enable us to trace the kris to their times, but the relaxation of this principle in the temples in the mountain of *Lawu* shows us several examples of it as far back as the beginning of the fifteenth century.

In single combat, the spear and kris are used alternately, the fight commencing with the first, and ending with the second. A mock action of this sort, with sheathed spears and wooden daggers, I have seen at the court of the sultan of Madura, maintained with considerable dexterity, and with so much spirit, that it was necessary for a moderator to stand by to part the combatants when the duel had the appearance, as it often had, of becoming something more than fictitious. Practice gives dexterity even with a weapon naturally so contemptible as the *kris*. In the year 1813, when

some English gentlemen were present at one of the hunting excursions of the people of Celebes, a wounded boar took shelter in a thicket, and kept the huntsmen at bay. An aged chief who was present observed, that but for fear of defiling his favourite *kris*, he would attack him. A young fellow of the party thinking this a piece of gasconade, and being less scrupulous in respect *to his* weapon, made him a tender of it. The aged huntsman accepted it, stole round the thicket, and with a single blow laid the animal motionless at his feet. In the same manner an alligator has been often attacked and destroyed.

Bucklers appear naturally to have been in early times frequent, but have been much discontinued since the prevalent use of small arms. Coats of mail, consisting of iron net-work, are still used by the natives of Celebes, and afford *some* protection against the spear, the kris, and arrow. A chief of Celebes, conversing with me on the subject, observed, with regret and disappointment, that they afforded no protection against a musket ball!

The sword was not introduced into Java until the year 1580, after the Portuguese had been near seventy years engaged in the traffic of the eastern islands. It was probably introduced earlier in the western countries, where there was more intercourse with Europeans, and where iron sooner be-

came, in consequence, abundant. The spear, and not the sword, however, is still the favourite weapon of the horseman.*

Of the manner in which fire-arms were introduced among the Indian islanders, and of the period when they first employed them, I can discover no distinct record, nor does language afford us any assistance in the inquiry. As it is acknowledged, however, that the nations of Asia were acquainted with the use of an imperfect artillery, and with the invention of gunpowder, it is possible that the East Indian islanders were not indebted to the European nations for their first knowledge of fire-arms, but may have acquired it in the course of their commerce with China. The cannon of the Indian islanders were made of brass, and not of iron. They are looked upon with that veneration with which fear and ignorance has induced all rude people to contemplate those terrible and destructive engines. From the same principle, the Indian islanders dignify each piece with some strange and pompous name, as our European ancestors were wont to do.

The use of small arms the Indian islanders *undoubtedly* acquired from the Europeans. The

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* The sword is frequently sculptured on the ruins of antiquities in Java, but these are in design so purely exotic, that no inference can be safely drawn from the fact.

matchlock they call by its Portuguese name, the firelock by a Dutch, and the pistol by a Dutch or English one. The matchlock was not employed in Europe for ten years after the Portuguese conquered Malacca; so that, if Europeans had observed the use of it among the islanders, they could not have failed to have noted so extraordinary a fact, when so frequently engaged in hostilities with them.

A few small cannon, for the defence of shipping, are of domestic manufacture, but, in general, all kinds of fire-arms, and every sort of ammunition attached to them, are of European importation; for, whatever is of their own fabrication is, as formerly observed, bad and inefficient, a fact which is sufficiently attested by the well known circumstance, that fire-arms and ammunition are in greater demand in the Indian islands than any other articles of foreign importation.

In the use either of artillery or small arms the Indian islanders are extremely unskilful, and express that wonder at the dexterity of Europeans which is the result of a conviction of their own ignorance. They are apt superstitiously to ascribe to every European an instinctive knowledge of the use of fire-arms. This inexpertness arises from the want of practice necessarily incident to scarcity of arms and ammunition, and to the practice of pursuing the chace by other means.

The *military force* of the Indian islanders may be divided into three descriptions, an infantry, a cavalry, and a navy.

The country of the Indian islanders is strictly what is characterized in military language by the name of a *close country*. It generally abounds in woods, most frequently in stupendous forests; the very habitations of men are thick groves of trees; it abounds in mountains, fastnesses, morasses, and frequent rivers. A comparatively trifling portion of it only is cultivated, and of that portion the principal part is no better than a morass for half the year. Excluding the little that has been done under European influence, they have no roads, but in place of them, at best wretched pathways. The maritime tribes inhabit the mouths of rivers and the marshy coasts of the sea. They are fishermen and petty merchants, and their chief intercourse is naval. This character of the country determines the description of military force employed in their wars. Infantry is the prevailing force, and the fishermen naturally conduct their wars principally on water. Cavalry may be rather looked upon as a matter of pomp and luxury than an useful arm of war. The great and their retainers are mounted upon horses, and in Java and Celebes they are numerous. The latter island, in particular, contains extensive plains, so unfrequent in the rest, where horse might be employed for

the purposes of war with advantage. The horses of that island, too, are superior in size and strength to those of any other of the Archipelago, and the habit of following the chace on horseback makes the people bolder and more expert riders than any of the rest of the tribes. The Javanese are very bad riders, and in many countries of the Archipelago, the horse is unknown altogether. The very best of the horses of the Archipelago are, however, it must be noticed, under any circumstances, unfit for the business of war, for they are too light and small for the charge, being, throughout, ponies not exceeding thirteen hands, and seldom equalling it. Such as they are, I do not understand that any attempt has ever been made to train them to charge in a body, for the purpose of overwhelming a mass of infantry, or to use them to make the best of a victory in pursuing a routed enemy, the only proper purposes of a cavalry.

The naval force of the Indian islands is certainly the most formidable, and the bravest. A maritime life of any kind is, to a certain degree, a life of difficulty and hardship, which engenders a large share of courage, activity, and enterprise, even without systematic discipline, which, except with nomade tribes, or hunters, alone insures them in a land force; and, consequently, the maritime tribes of the Archipelago are naturally distinguished beyond those who live the tranquil life of husbandmen, by superior courage and har-

dihood. The Javanese, though more civilized, and, therefore, more capable of subordination, and better furnished with the munitions of war, are hardly a match for the inhabitants of Celebes. In the year 1672, as will be seen in the historical part of the work, a band of fugitives from Celebes, two thousand in number, laid waste the eastern extremity of Java, and subjected some of the finest provinces to their authority. The sultan of Mataram sent a large force against them, and a battle was fought, in which the Macassars feigned a flight, and dispersed in the neighbouring woods. The Javanese attempted no pursuit, and, elated with their supposed victory, encamped on the field of battle, without taking any precautions. At night they were surprised by the Macassars, and routed, without attempting any resistance.

The sultan of Mataram, incensed at the disgrace which thus befel his arms, fitted out a still larger expedition, which he sent by his war-boats to the east. The Javanese expedition effected a landing, and was instantly attacked, on the beach, by the Macassars, and totally overthrown, though *in a small degree* supported by the Dutch. The fugitives took to their boats, but the Macassars also taking to theirs, and having a still more marked superiority in this mode of warfare, they pursued the discomfited Javanese, sunk and destroyed many of their shipping, and thus gained a naval victory in addition to that which they had gained by land. It is

from the Javanese writers that I borrow the account of the defeat and disgrace of their countrymen.

In despotic monarchies, or in aristocracies equally arbitrary, where the great mass of the people is in a virtual, if not in a nominal state of slavery, and all are armed for protection against the violence of each other, it is not difficult to imagine how a military force is commonly raised. In the despotic government of Java the sovereign issues his mandate to the governors of provinces, and from them it proceeds, in succession, to the heads of villages, who select the peasants that are to form the levy. The lands of the persons so selected are cultivated, in their absence, at the expence of the village association, and they are provisioned by the sovereign during the period of their service, but get no pay. These form, of course, an armed, but undisciplined mob. A better description of troops are those about the person of the sovereign, for the purposes of pomp and ceremony. These are better armed, regularly paid by assignments of land, and have *some little* discipline. The governments of all those countries have the military character naturally impressed upon them, throughout all their details; no distinction is any where to be traced between civil and military employment; and the titles, offices, and authorities, under which the people live, in the provinces and villages, are transferred to the organization of their armies. Some Indian names are applied to the superior offices.

The commander-in-chief among the Javanese is, for example, designated by the Sanskrit name of *Senopati*, and the leaders of divisions by that of *Wadono*, both Sanskrit words.

Among the more warlike tribes of Celebes every individual capable of bearing arms must appear in the field if summoned. War is there determined in the council of the state, when the assembled chiefs take a solemn oath binding themselves to the prosecution of it. This is one of the most imposing ceremonies of these semi-barbarians. The banner of the state is then unfurled before them, and sprinkled with blood. Each chief, in succession, dipping his kris in a vessel of water, drinks of the consecrated liquid, and, rising from his seat, dances round the bloody banner, with wild fantastic motions, brandishing all the while his bare weapon, as if about to plunge it into the breast of his enemy. In this attitude he repeats the oath in an enthusiastic tone, pronouncing some dreadful imprecation against himself should he violate it, such as,—that his favourite weapon may prove more injurious to himself than to his foe,—or that his head may be cut off when he is left on the field,—or that his heart, should he fall in battle, may be devoured by his enemy. I was present during a ceremony of this nature, at Macassar, in 1814, when the native allies of the European authority took an oath to prosecute a war against the state of Boni. I was particularly struck by the

ingenious flattery with which some of the chiefs expressed their devotion to their new ally. "Observe me, you English," said one, "prepared to live and die with you. I am as a spear in your hands, ready to do execution in whatever quarter directed." "I shall be in your hands," said another, "like a skene of white thread, ready to assume whatever colour the skill of the dyer may please to give it." Some of the most refined of these flatterers, I afterwards learnt, were remarkable for their want of good faith! *

* A similar ceremony, as practised at Mindanao, is very happily described by Dampier. "After this most of the men, both in city and country, being in arms before the house, begin to act as if they were engaged with an enemy, having such arms as I described. Only one acts at a time, the rest make a great ring of two or three hundred yards round about him. He that is to exercise comes into the ring with a great shriek or two, and a horrid look; then he fetches two or three large stately strides, and falls to work. He holds his broad sword in one hand, and his lance in the other, and traverses his ground, leaping from one side of the ring to the other, and, in a menacing posture and look, bids defiance to the enemy, whom his fancy frames to him; for there is nothing but air to oppose him. Then he stamps and shakes his head, and, grinning with his teeth, makes many ruful faces. Then he throws his lance, and nimbly snatches out his cresset, with which he hacks and hews the air like a madman, often shrieking. At last, being almost tired with motion, he flies to the middle of the ring, where he seems to have his enemy at his mercy, and, with two or three blows, cuts on the ground as if he was cutting off his enemy's head. By this time he is all of a sweat, and withdraws triumphantly out of the ring, and presently

The naval armaments of the maritime states are levied in the same manner, and necessity has pointed out, in this situation, a peculiar strictness of discipline. The *laksimana*, or admiral, on this principle, has delegated to him the whole power of the sovereign when he proceeds on actual service.

The *discipline of the army* is maintained by a more violent and summary execution than ordinary of those customary laws which obtain in the respective states in periods of peace, but, above all, by the superstitious devotion of the people to their leaders, and of these to their sovereign. There are few punishments short of capital ones, and the lives of the people are held as nought. The opinion of the chiefs on this last point is unequivocally expressed in an anecdote which I shall have occasion to relate in the chapter on the History of Java, where a Javanese chief tells his Chinese ally "that the lives of the people are considered by them of no consequence," and "that he may *exterminate* the soldiery if he but regard the lives of the commanders." The monarch, in his

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another enters with the like shrieks and gesture. Thus they continue combating their imaginary enemy all the rest of the day; towards the conclusion of which the richest men act, and at last the general, and then the sultan, concludes this ceremony. He and the general, with some of the other great men, are in armour, but the rest have none."—*Dampier's Voyages*, Vol. I. pp. 339, 340.

turn, disregards the lives of the chiefs, and maintains discipline by the terror of frequent executions. In the years 1628 and 1629, the sultan of Mataram, called by the Javanese *the great*, sent a numerous force against the Dutch just established at Batavia, with the view of expelling them from the island. As is sufficiently known, the Javanese were compelled to raise the siege, with great loss. Sufficient bravery was displayed, and no fault was ascribable to the generals but want of success. This want of success, however, the sultan punished by sending the public executioners to the camp to take the lives of the commanders. *Bahu Rakso*, a chief who had distinguished himself by his gallantry, and had been wounded in a gallant attempt to take the European fortress by storm, was executed, and so was the chief commander, the Prince *Maduro Răjo*. These commanders themselves had not been idle in the exercise of *their* authority, for when the Javanese raised the first siege, the Dutch found 744 dead bodies, decapitated or poignarded, and in other respects mutilated. These unfortunate persons had been executed for failing in an attempt to carry the European fortress three days before. When the Javanese retreated the following year, a similar scene presented itself, and the air was tainted by 800 putrid bodies, which the Dutch found, disfigured with wounds, and stretched out in rank and file,

in the attitude and position in which they had suffered death.

Of the difficult art of *supplying an army with subsistence*, understood only by nations in the highest state of civilization, it is needless to insist, that the barbarians of the Indian islands are wholly ignorant. When in their own country, native armies are maintained by irregular *contribution*, which deserve rather to be called *extortion*, and in that of the enemy by a more avowed plunder. When naval expeditions are undertaken, the prospect of distress, from a dearth of provisions, becomes more apparent to them, and a little more foresight is then displayed. Every individual embarking furnishes himself with a stock of provisions, and is at his own charge like the feudal militias of our forefathers.

The Indian islanders are capable of great efforts of abstinence, and satisfied with a very moderate allowance of what would appear to an European very indifferent food. When hostilities appeared inevitable between the European power and the sultan of Java, I was discoursing with a native of good sense, on the probable consequences, and urged that the want of provisions, resulting from their improvident habits, would disable the Javanese from supporting a protracted contest. He begged me not to build on any hope of this nature, strongly remarking, that, "in case of necessity, the

Javanese could subsist on the very leaves of trees." In many of their wars, they had, in fact, after the country had been laid waste, fed on wild roots and the tender leaves of forest plants. In their own climate, the vigour and suitableness of their frames enable them to support a degree of fatigue, exposure, and privation, under which the constitutions of Europeans, or even of the inhabitants of *Asia*, of higher latitudes, would soon sink. In the island of Ceylon, a climate even worse than their own, they are found by experience to be the only description of foreign troops capable of withstanding the inclemencies of a campaign.

Notwithstanding all this, their great improvidence exposes them to much hardship and suffering, and is the principal cause of their inability to effect any considerable and permanent conquest. In the year 1615, the ambitious projects of the sultan of Mataram raised against him a host of enemies, and the chiefs of the whole of the eastern districts of Java, and of all Madura, marched with a very large force to attack him. They had not yet reached his frontier, in their march westward, when their entire stock of provisions was exhausted, and the then desolate state of the country afforded them no relief. "They were," say the Javanese writers, "compelled to feed on the bark of trees, and a few wild roots which they gathered in the forests." It was the inclement season of the periodical rains,

and want and fatigue brought on the most fatal disorders. The people of Mataram attacked them in this state of distress, and few of this large force returned to their own country.

Desertion as well as disease are inseparable from armies so constituted, and so managed. The Dutch assert, that of the first army of the king of Mataram, which besieged their new capital of Batavia in 1628, the numbers, amounting, at first, to 100,000, were reduced, when they raised the siege, chiefly by famine and desertion, to 10,000. In the following year, a still larger army renewed the siege, and were soon reduced, by the same means, to half their original numbers. It is probable that these accounts are greatly overrated, but the fact of prodigious mortality and desertion is well authenticated, as well as probable. The country in the vicinity of Batavia is sterile and uncultivated, compared to the fertile provinces occupied by the princes of Mataram, and it is impossible it could have afforded subsistence to the improvident multitude thus assembled within so narrow a compass.

From the peculiar character of the country they inhabit, and their own condition in society, we are not to look for a bold and decisive *mode of carrying on war* among the Indian islanders. Their hostilities are conducted by artifice and stratagem, and they seek for that confidence which discipline does not afford

them—in the shelter of advantageous ground,—the cover of houses and palings,—or in petty redoubts, when they are in an open country. They are seldom wanting in individual courage, and when, by such means as now mentioned, they are supplied with the confidence which discipline alone is adequate to confer upon a civilized army, they may be considered as formidable enemies. They appear pusillanimous in offensive and open warfare, but certainly respectable in a war of defence. Were they capable of acting systematically and perseveringly on this principle, they might defy the most numerous and most disciplined foreign invader; and, in fact, and throwing political intrigue out of the question, have actually done so on several occasions. It is on the same principle, that European nations have found the *pralus* or vessels of the Malays, and other maritime tribes, so dangerous to attack. By running into shallow water, they escape the effects of artillery, and when pursued by boats, have been generally found more than a match for the most gallant crew of British seamen. The complex frames of bamboo, which form their decks, give protection to their own crews, and an opportunity, with their long spears, of attacking their assailants; and many tragical experiments prove that it is either unsafe or impracticable to attempt capturing them by boarding.

When hostile armies attack each other, they

construct petty redoubts of two or three feet in height, capable of affording them protection in their favourite sitting posture, against small arms and missile weapons. These are occupied by the advanced parties; and from them a braver man than the rest will advance and challenge an individual of the opposite party, and a single combat will ensue. The passions of the parties being heated by the result, those behind the entrenchments will occasionally quit their cover, and thus the action according to circumstances will become more or less general. Commonly speaking, their battles are a series of personal, or at most of partial rencounters, and their armies are utterly incapable of any great or concerted movement, by which the fate of a battle, or the fortunes of a nation, might at once be decided.*

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* "The sultan of Mindanao sometimes makes war with his neighbours the mountaineers or Alfoores. Their weapons are swords, lances, and some hand-cressets. The cresset (*kris*) is a small thing like a bayonet, which they always wear in war or peace, at work or play, from the greatest of them to the poorest or meanest persons. They do never meet each other so as to have a pitched battle, but they build small works or forts of timber, wherein they plant little guns, and lie in sight of each other two or three months, skirmishing every day in small parties, and sometimes surprising a breast-work; and whatever side is like to be worsted, if they have no probability to escape by flight, they sell their lives as dear as they can; for there is seldom any quarter given, but the conqueror cuts and

It does not appear that either humanity, or the laws of war, among even the most civilized nations of the Archipelago, disclaim any possible mode of hostility likely to injure an enemy. The Balinese, one of the most civilized tribes, we have already seen, poison their darts, and others do the same thing with their *krises*. The supply of water is too abundant in the countries they inhabit to give them any opportunity of attempting to poison streams or wells, or without doubt they would try it. In the year 1623, the great sultan of Mataram achieved the conquest of Surabaya by poisoning, or, at least, rendering noisome, the stream of the river which leads to it, and thus forcing the inhabitants to submit. This feat is commended by the Javanese writers as a masterpiece in the art of war, and, of course, not a hint is given of the baseness of the transaction.

The conduct which the Indian islanders observe towards the dead, wounded, and prisoners, is marked by the same want of generosity, and the same inhumanity, which on this subject is found to be the invariable concomitant of all the early stages of civilization. Some of the savages of Borneo destroy their prisoners, and devour their flesh. One nation of Sumatra, acquainted with the art of writing, and possessed of books, are well known to be

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hacks his enemies to pieces."—*Dampier's Voyages*, Vol. I. pp. 337, 338

cannibals. Among other tribes, the sculls of enemies are piled as trophies round their habitations, and it is alleged that, with some, a youth is not entitled to a wife, until he has produced the head of an enemy. Among the people of Celebes, when an enemy falls wounded, the victor strikes off his head, and placing it on the point of a spear, bears it away in triumph to his party. This, however, is far from being the utmost length to which they proceed, for on some occasions they actually go so far as to devour the heart of an enemy, either to gratify revenge, or aggravate their usual ferocity. This practice is by no means unfrequent, and there is hardly a warrior of note who, at some period or other, has not partaken of this horrid repast. I saw several who had done so, and one person coolly observed, that it did not differ in taste from the offal of a goat or buffalo, but another less hardened assured me, that he did not sleep for three nights after his meal, so haunted was his imagination at the thought of what he had done.

It does eternal dishonour to the Dutch that they permitted themselves to be quiet spectators of such transactions as these on the part of their allies. They were in the habit of receiving from them basketfuls of their enemies' heads as valuable gifts!*

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* In the secret journal kept by one of the governors of Macassar, we have several entries recording the receipt of such presents. I shall transcribe two of them:

I do not find that the Javanese, when their hostile passions are aroused, are in any respect less ferocious than their neighbours. In the last great war in Java, Mangkunăgoro having gained an advantage over the Dutch, and Susunan at *Wădi*, in the province of Pajang, announced his success to his coadjutor Mankubumi, by letter, transmitting to him, at the same time, "*the ears* of the enemy killed or taken in action." I shall translate the literal account of it from a history of the war, written under the eye of Mangkubumi. "The Pangeran Adipati sent his father* a messenger without delay, forwarding *the ears* and *prisoners* of the former *four strings*. The messenger arrived in due time at Banaran, and presented what he was charged with to the monarch. The prince, having read

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"Thursday, January 29th, 1777.—In the morning the Boni interpreter came to the castle, accompanied by a messenger from Datu Baringang, who presented to *his excellency*, in a basket, four enemies' heads, said to be the heads of Kraing Borisala, and of three galarangs," (a raja and three inferior chiefs.)

"Friday, 30th.—Five heads more were brought to *his excellency* this morning, reported to be those of some chiefs of the enemy, taken prisoners in the action at Tikere yesterday, when they were defeated, and pursued with the loss of fifty men, by Arung Panchana."

* The terms son and father are here used, according to the manners of the people, to express the relative ranks of the parties.

the letter, applauded his son for the victory he had gained, and for the ears and prisoners he had transmitted. He forthwith directed the ears to be sliced, and stewed along with the flesh of buffaloes, and with spices, and he gave the mixture to his people, directing them to eat it with rice. He did this, he said, because his followers were not present in the fight, and had not obtained the ears of an enemy in battle, and that, by thus partaking of them as food, they might not be put to *shame* because they were absent from the fight; he wished as if it were to inspire his army with the same feelings as if they had been actually engaged. The people eat, one and all, and bowed in respectful silence."

The conduct of Mangkunagoro was not less ferocious on the same occasion. The Bugis and Balinese prisoners, from the reputation of their bravery, he spared to fight his future battles, but those of the half breed of those people, and all his Javanese prisoners, he massacred in cold blood; and it was the ears of those unfortunate persons that he transmitted to Mangkubumi, and which became the materials of the abominable feast of the latter.

I shall relate one more of the actions of this same Mangkunăgoro, who, it may be remarked, was less ferocious than any of the contemporary chiefs. I give it in the words of the historian of his own actions, compiled, as usual, under his

own eye. Jayeng Rono, a man of humble birth, had been a retainer of Mangkunăgoro, but quitted him to follow the fortunes of his rival Mangkubumi, after the quarrel of these chiefs. After a time, Mangkubumi gave him his daughter in marriage, in gratitude for which he made an attempt to seize upon the person of Mangkunăgoro, but in that attempt was taken prisoner, and *executed*. The native writer gives the following account of the circumstances which attended his execution. "I ask thee, Jayeng Rono, said the prince, when the prisoner was brought before him, whether you wish to live or die; make your selection. *Jayeng Rono* replied, My lord, if possible, I entreat to live; it is true, I am a little man, and a *mouthful* of rice is all I beg. The prince's wrath was kindled when he heard these words, and he said, What advantage has *my father* reaped in bestowing upon you a princess? when a man of low birth weds a princess, he becomes *my* equal. Your wish to live proves you doubly unworthy; you bring shame on your connection; the country itself is dishonoured by such behaviour; and you must assuredly die. On these words, the prince turned about to *Joyo Latan*, a chief in attendance, and directed him to carry the prisoner without. Joyo Latan understood him, and did so accordingly, bearing, at the same time, the royal sword. Jayeng Rono was stabbed without delay, and his head severed from his body.

Joyo Latan, the chief who put him to death, devoured his heart, for he had vowed to do so, should be fall into his hands, in revenge for Jayeng Rono's having once carried off his wife a prisoner. In his fury he passed the poisoned sword through the body, up to the hilt. The prince writing about this time to Samarang, took occasion to present the head of Jayeng Rono as a gift to the Hollanders."

Slavery is the mildest lot of a prisoner of war. The predatory expeditions of the Indian islanders are much more frequent than their conquests; and in these the principal objects are to carry off the cattle and women, and to lay the enemy's country waste by fire and sword. When a smaller state yields, without resistance, to the ascendancy of a more powerful one, it is treated with moderation, the conqueror usually contenting himself with a trifling tribute, almost nominal; for, between this and absolute spoliation there is no medium. This is an event most likely to happen when the conquerors and conquered have the same language, manners, and political institutions. When these differ there is naturally more rancour on the one side, and repugnance on the other, and the rights of conquest are exerted with the last degree of severity. In the year 1640, the state of Macassar having conquered the Bugis state of Boni, a Macassar chief was appointed as viceroy over the people of Bo-

ni, and they were permitted to enjoy their own laws and customs; but in 1643, the Bugis having revolted, the whole nation were deprived of their national institutions, and declared to be in a *state* of *slavery*. In the year 1660, they revolted again, and were assisted by the Bugis of Sopeng. The Macassars conquered them a third time, and soon reduced the state of Sopeng to a similar condition of *slavery* with that of Boni. We find, on these occasions, the princes and chiefs cast in irons with the common prisoners, and ten thousand of the undistinguished multitude, about to be employed on a trench, for cutting off from the main land a Dutch fort situated on a little peninsula.

When the people of Boni, in *their* turn, acquired the superiority, they used their victory with as little moderation. In 1669, with the assistance of the Dutch, they defeated the army of Macassar at the island of *Butung*, and the number of their prisoners being so great that they knew not how to dispose of them, they left five thousand on a desert island, from whence the greater number were afterwards taken away as slaves by the inhabitants of *Butung*.

The *numbers* and *servility* of the population of Java have, among them, rendered slaves of little value, and those in possession of power have experienced it to be more for their advantage to permit the people to occupy themselves in the culture of a pro-

ductive soil. In the invasions of the Javanese, therefore, we find the handsomest of the women only carried off for wives and concubines, the men being either put to the sword or left, with the old women and children, unmolested.

Among the more civilized tribes, when permanent conquests are attempted, prudence has dictated to the Indian islanders, as to other eastern nations, the necessity of leaving the native chief in nominal authority, and managing the government through his agency. The princes of Mataram managed most of their conquests on this principle, as those of Cheribon, Madura, and Surabaya, the princes of which became, in time, hereditary feudatory chiefs of provinces under their sway. In the year 1623, the prince of Surabaya, the first independent chief of the eastern portion of Java, submitted to Mataram, and sent his son and heir to the court of the sultan to tender his submission. On this occasion, says the native writer narrating the transaction, "the young chief, his wives, and all the females of his family, with his companions and retainers, were brought to the foot of the throne bound in cords, *according to custom.*" With the Javanese it seems to be a pretty universal rule, and a matter of course, to put a chief to death who is taken prisoner without surrendering himself, or making conditions, and, even in the last case, should prudence and interest not dictate an opposite course, his life cannot be counted safe.

A generous treatment towards a fallen enemy is a thing almost unknown, and, as we have already seen, even the bodies of the dead are treated with outrage. The page of Javanese story, that with which I am best acquainted, affords but two examples to the contrary. The first is the story of a fallen chief of the province of Japan, whose open and honourable hostility was commended by the *Great Sultan*, and to whose body he ordered a decent interment. An account of this transaction will be found in the historical department of the work. The second example is of a more decided, and still more favourable character. In an action fought at Surabaya, in the year 1718, between the Susuhunan and his allies on one side, and the revolted chief of Surabaya on the other, the former were entirely overthrown, and *Panji Wiro Nagoro*, chief of the province of Tagal, of the party of the vanquished, lost his life, after signalizing himself by various acts of personal valour. This man was esteemed by all parties, and his enemies, instead of mangling and insulting his body, as usual, bestowed a decent funeral upon it. The native annalist states the fact as a remarkable occurrence.

BOOK III.

PROGRESS IN SCIENCE AND THE HIGHER ARTS.

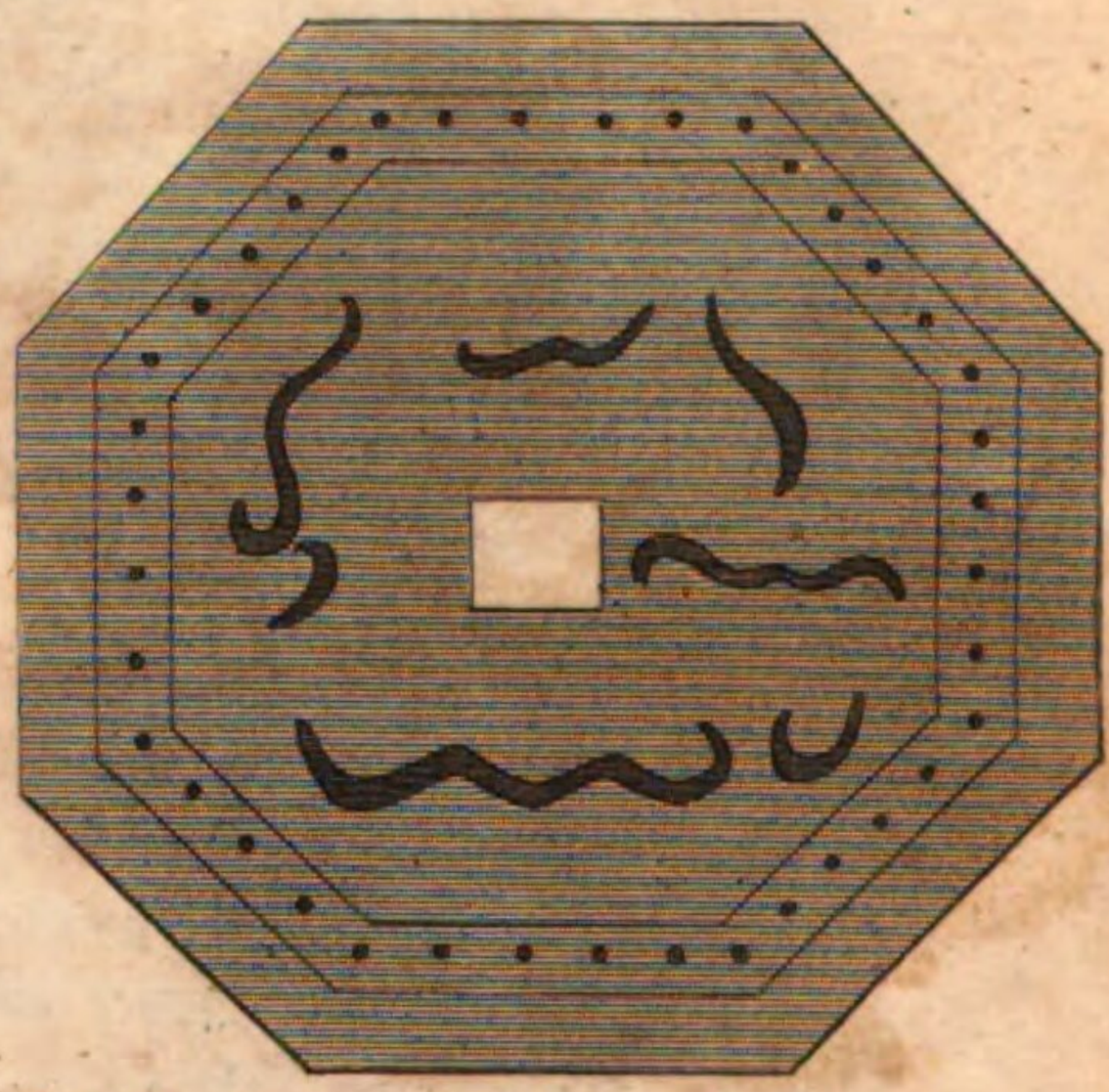
FROM what has been already stated respecting the character and manners of the Indian islanders, the reader will not expect to find that they have made much progress in the sciences or higher arts. Some, however, they have made, and a description of it will be found highly curious and instructive. I shall endeavour to furnish it in the three following chapters; the first, rendering an account of their arithmetic; the second, of their calendar; the third, of their geography and navigation; and the fourth, of their music and medicine.

CHAPTER I.

ARITHMETIC.

Indian islanders ignorant of arithmetic as a science.—Employ foreigners as accountants, and count by cutting notches on slips of wood, or tying knots on cords.—History of the origin of numbers among them.—One system of numerals generally prevalent from Madagascar to New Guinea.—Binary scale.—Quaternary scale.—Quinary scale.—Senary scale.—Denary scale.—A thousand, the highest term generally known to the native languages.—Sanskrit terms borrowed, and error in doing so.—Ten thousand, the common limit of the numerical scale of the Indian islanders.—Javanese alone extend their terms as far as ten billions.—Principles on which the numerals of the ceremonial dialect of the Javanese are formed.—Origin of the ordinal numbers and fractions.—Indian islanders acquainted with the Hindu digits.—Principle on which the Javanese digits are formed.—Vocabulary of the numerals of twelve languages.—Measures used by the Indian islanders.—Bulk, and not weight, the principle on which measure is estimated.—Example in the corn measure of the Javanese.—Dry and liquid measures.—Measures by weight, introduced by foreigners, chiefly by the Chinese.—Description of these.—Gold measure.—Measures of extent still more imperfect than those of gravity.—Description of them.—Land measure of the Javanese.—Standards of exchangeable value.—Articles used by the ruder tribes for this purpose.—Introduction of metallic currency.—Tin coins.—Brass coins.—No silver coins anciently used.—Gold coins.—European coins.—Paper currency introduced by the European governments.

Old Tin Coins of Perak and Queda



Ancient Javanese Silver Coin

Ancient Javanese Coin of Lead

Ancient Javanese Coin an Alloy of Copper & Iron

Javanese Coin after the Conversion to Mahomidanism

Gold Coin of Achin

Gold Coin of Achin

Gold Coins of Macassar

Gold Coins of Achin

COINS OF THE ARCHIPELAGO.

W.H. Lizars sculp.t Edin.r

Edinburgh Published by Constable & Co. 1820.

The Indian islanders are wholly ignorant of arithmetic as a science, and, indeed, know nothing of the common rules of calculation. In their mercantile transactions, they employ the Chinese and natives of the east coast of the peninsula of India as accountants; and, notwithstanding the knowledge which the Javanese have of the Hindu numeral characters, they frequently calculate by cutting notches on slips of wood or bamboo, or by tying knots on a cord. In all pecuniary transactions the women are more expert than the men, and we find them mostly employed as brokers and money changers. *

The history of the origin of numbers among them affords a more interesting subject of disquisition than their rude processes of calculation. Each tribe appears originally to have possessed a distinct system of numerals, and traces of this may be detected in almost all the languages. Indeed, those of *Tambora* and *Ternati*, very centrically situated,

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* "When they have occasion to recollect, at a distance of time, the tale of any commodities they are carrying to market or the like, the country people often assist their memory by tying knots on a string, which is produced when they want to specify the number. The Peruvian *Quipæs* were, I suppose, an improvement on this simple invention."—*Marsden's Sumatra*, p. 192.

retain them, the first unaltered, and the last nearly so; but the influence of one pervading speech upon all the rest has in no department been so complete as in that of the numerals. Generally speaking, the same numerals may be said to prevail from Madagascar to New Guinea, and the Philippines, and even to have spread to the South Sea Islands. The general question of the dissemination of the great Polynesian language will afterwards be considered; and it will, at present, be sufficient to remark, that the history of mankind affords no other example of so wide a dissemination of a rude speech among savage and barbarous tribes, who never appear to have been more civilized, and seldom more enterprising than we at present find them. The tribes under whom this striking phenomenon is discoverable form, to be sure, the most numerous portion of the human race, connected by a proximity of insular situation, and the facility of intercourse which this situation naturally presents, will go far towards a rational explanation of it.

The prevalence of the great Polynesian, necessarily an obsolete and obscure language, affords a principal obstacle to the detection of the etymologies of the numeral terms. Many striking etymologies may still, however, be detected, and were we better acquainted with the ruder dialects in which the Polynesian is least prevalent, I am convinced

that more important and interesting derivations might be traced.

The lowest term of classification, the *binary* scale, is not discoverable by the examination of language to have been adopted by any of the tribes, unless I except the woolly-haired races of the mountains of the Malayan peninsula. These can count in their own language no farther than two. For *one* they have the word *Nai*, and for two *Be*. The word *Be*, I find, means in the vernacular language younger brother or second born. After two, this race reckon by the common Polynesian numerals, at least in their intercourse with the more civilized races which surround them.

Evidence of the existence of the *quaternary* scale may be considered to exist in the *Ende* language, one of the dialects of *Flores*. The term *wutu*, of unknown derivation, expresses the root four, and eight is called two fours. It is probable, that, were we furnished with more copious specimens of these dialects, we might find the process carried farther. *

Of the *quinary* scale, or calculation by fives, even the Polynesian language itself affords relics. It is, however, very remarkable, that this evidence is not derived from the civilized languages of the great western tribes, but from the less cultivated ones of

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* *Raffles's Java*, Appendix, Vol. II.

the minor tribes to the eastward. In some of the languages of Celebes, and of several of the surrounding islands, we discover the almost universal term for five, *lima*, to be derived from its natural source, the same word meaning, the hand. In the *Ende* language already quoted, the terms for six and seven are accordingly nothing else than *five and one*, and *five and two*. Farther traces of the prevalence of this classification seem to have been banished by the encroachment of the decimal scale, which ultimately obtained in all.

The language of the Sundas or mountaineers of Java alone contains evidence of the former existence of the *senary* scale of classification. *Gănăp*, which is six in that language, means also complete, terminated, evidently in relation to its forming the term or limit of their first system of numerals.

The *denary* scale has, in the progress of society, as with other people, superseded the rest, and is now of universal prevalence. The language, however, in which it is clothed, is usually so obsolete, that it is not often we can trace a satisfactory etymology. In many of the languages, as the *Malay*, *Sunda*, *Achi*, *Mandar*, and *Ende*, the term for nine means *two*, and *one* short of, or taken away from. In the Achinese, the etymology is very distinct, *Sakorang*, literally translated, being one short or wanting; and it is hardly less so in

Malay, where *Sambilan* evidently means one taken, that is, taken from the heap or whole.

The terms for *ten*, for *hundred*, and for *thousand*, have escaped my attempts to trace them to their origin. *Twenty*, *thirty*, *forty*, are two tens, three tens, four tens, and the regular mode of forming the intermediate terms consists in simply affixing the digits. It is not improbable, but at some period in the history of numbers, the principal terms were represented by specific terms. We have one example of this in the word *widak*, which is sixty in the Javanese, and some other dialects. Remnants of the *quinary* scale are also to be discovered in this department. Twenty-five is *Lawe*, and fifty is *Ekăt* in Javanese. The same language frequently counts by fives in the intermediate numbers, as will be seen in the specimen of the numerals. By this mode of reckoning, which proceeds as far as eighty-five, *thirty-five*, *forty-five*, &c. are expressed by saying, five short of forty, five short of fifty, &c. From ten to twenty, the numeral terms are formed by adding to the digit the inseparable particle *wălas* or *blas*, which I suspect to be the same as the Javanese word *tălas*, done or finished, in reference to the end of the scale. The intermediate terms between twenty and thirty are formed occasionally in a similar manner, by prefixing the digits to the word *likor*, the meaning of which I have not been able to discover. From a

hundred to a thousand, and from this last term to ten thousand, the denary scale proceeds, in general, by the regular process of prefixing the minor term to the greater. In forming the terms for hundreds, we discover some relics of the quaternary scale in the occasional mode of reckoning by *four* hundreds, confined to the root, and its duplex *eight* hundred.

The language applied to the terms of the denary and other scales, we discover, from the examination of language, to have been frequently borrowed from the counters employed in calculation. The words *Siji*, *Satu*, and *Sabuah*, in *Javanese*, *Malay*, and *Manadu*, though they appear, at first view, to be primitive words, really mean *one seed*, *one* stone or pebble, and *one fruit*. The meaning of the terms *Lawe* and *Ekăt*, *twenty-five* and *fifty*, in Javanese, are the first a thread or string, and the second a skein of thread. *Four* hundred and *eight* hundred are expressed in the Javanese, and some other languages of the western portion of the Archipelago, by the terms *Samas* and *Domas*, which mean, " one bit of gold, and two bits of gold." In the language of the *Lampungs*, one of the nations of Sumatra, the term for thousand is *Paku*, a spike or nail. In the *Macassar* and *Butung* languages, I find that *hundred* is expressed by the term *Bilangan*, meaning one tale or reckoning; implying, I imagine, that in one period of the his-

tory of the progress of numbers, this was the utmost extent of their numerical scale. An examination of the numerals of the more naked languages of the ruder tribes, which are either wholly original, or have borrowed little from the Great Polynesian, would, had we an acquaintance with them, no doubt, give still more important and interesting results than those I thus endeavour to point out.

A thousand is the highest term for which the languages have a native word, the Javanese excepted. The numbers above it are expressed by Sanskrit numerals, a procedure perfectly analogous to that which has been pursued in other departments of language. It is remarkable, that all the tribes use these terms erroneously, having adopted for *ten thousand* the term which should express a *hundred thousand*; for a *hundred thousand* the term which should express *ten millions*; and for one million the term which ought to express *ten thousand* only. I have the living authority of Mr Colebrook for this statement. Whatever the source of the error, its general adoption must be looked upon as a certain proof that all must have been instructed by one native tribe, that the error was propagated through one native channel. The *Lampungs* alone, a people of Sumatra already mentioned, have not fallen into this mistake, and use the term *Laksa*, or a hundred thousand, in its legitimate sense. This is one of those anomalies

extremely difficult to be accounted for, which we so often discover in our examination of the affiliation of the languages of the Indian islanders. The same tribe, we have seen, has not adopted the general term for *thousand*. Yet, in geographical situation, they lie immediately between the Malays and Javanese, the two great civilized tribes of the Archipelago, from whom it is reasonable to imagine, the less civilized must have borrowed the principal features of improvement. Mere juxtaposition, as we shall often have occasion to remark, will not often assist us in explaining the connection which exists between the different tribes. Their intercourse has always necessarily been maritime; and it is the course of navigation,—the nature of the monsoons,—and, perhaps, the commercial or alimentary necessities of the people, that we must consult in such examination, rather than the topography and relative geographical bearings of the countries they inhabit.

The numerical scale, even with the borrowed assistance of the Sanskrit, extends, with the less civilized tribes, as already remarked, no farther than *ten thousand;* with the Malays it extends to a *million;* and with the Javanese, the most improved people, as far as *ten billions*.

The Sanskrit language is now and then discovered to have made encroachments on the Polynesian numerals in their lowest ranks; thus, the Balinese use *dasa* for ten. In the ancient obsolete lan-

guage of Java, the Sanskrit numerals, of the lower denominations, are preserved in great purity, but have made no impression on the vernacular language; and we may safely conclude, that they were always confined to the recondite language of learning and religion,—that their connection was extrinsic, and their introduction belonging to a much more recent period than that of the great Polynesian numerals.

The quaint ceremonial dialect of the Javanese, we might expect to find, would throw some curious light on the subject of numerals; but it is not much we gather from this source. *One* is formed by affixing to the simple form of the numeral the word *tunggil* alone by itself, and *two*, by the word *Kaleh*, which is the preposition *with*, meaning, no doubt, with another, the two words being used as correlatives. The term for *three* is the Sanskrit numeral. For *four*, we have the word *kawan*, which means a flock or herd of animals, most probably pursuing the relation established in the first two numerals. I am sorry that I have not been able to detect the etymology of the word *Gangsal*, which is used to express five, as, no doubt, it would be found to be significant, and its etymology instructive. The rest of the numerals do not differ from those of the ordinary language. The *decad* is formed by the Sanskrit term; *hundreds* and *thousands* by the usual native ones; and all the

intermediate numerals, by combining those now mentioned, upon the principle already described.

The *ordinal* numerals, and the fractions of numbers, are formed by very simple contrivances, but such as throw a curious light on the history of this department of language among the Indian islanders. The ordinal number is formed, by prefixing to the cardinal the particles *Kă* or *Peng*, and the fraction, by converting this into a noun, and adding the inseparable particle *an*. The Javanese form the fraction by prefixing to the numeral, usually in an abbreviated form, the verb *Poro*, to subdivide, of which *Prapat*, a fourth, is an example.

On specifie occasions, the fractional numbers are sometimes borrowed from a natural reference to the parts of the animal body. In the Javanese language, and from thence borrowed into others, *Suku*, which means a leg or limb, is applied to a *fourth* or *quarter*. In the same language, the word *Jung* is applied to the largest of their land measures. *Kikil*, a leg, expresses the largest fraction of it or one-half; and *Bahu*, a shoulder, one-half of this last measure.

The Hindu digits have been known to the Indian islanders for many ages, and we can trace them on monuments of stone and copper, as far back as the beginning of the twelfth century of our era, a period of six hundred years. The people of the Indian islands had, at the time, no in-

tercourse with any other nation than the Hindus; and as such monuments have been dedicated to Hinduism, it is fair to infer, that they borrowed them from the Hindus only.

Neither the ancient nor modern figurate symbols, it is, however, to be observed, bear much resemblance to the *Dewanagari* figures. Six of them, namely, 1, 2, 6, 7, 8, and 9, are formed by the letters of the alphabet in both, or by slight modifications of them. The remaining ones, namely, 3, 4, and 5, certainly have a remote semblance to the *Dewanagari* digits, and possibly more to some of their modified forms in the Deccan. I conclude from this, that the Javanese employed the letters of the alphabet in calculations before their acquaintance with the Hindus; and that, upon this occasion, the latter modified the signs which they found, as they did with the alphabet, adapting them to the perfection of the new scale.

I shall here subjoin a copious specimen of the Polynesian numerals, that the reader may have an opportunity of examining the principles of the analysis I have given of their history and origin. The specimens of the Javanese, Malay, Bali, Sunda, Biajuk, and Bugis, are given from my own collection; those of the Lampung, Tambora, and Ternati, from that of Sir Stamford Raffles; the Timuri, from a collection by Lieutenant Owen Phil-

lips, to whom I shall take another opportunity of offering my acknowledgments; the Majindanao and Papua from Forrest's Voyage to New Guinea; the specimens of the Madagascar in their respective orders, from Drury and Flacourt; and that of the Friendly Islands from Cook's last voyage.

Should the reader derive either amusement or instruction from the little sketch I have now given of the history of the numerals of the Indian Islands, he will owe it chiefly to the assistance I have derived from the writings of one of the most ingenious and original of writers or philosophers, Mr Leslie of Edinburgh, whose treatise on the Philosophy of Arithmetic has been my guide throughout.

English	*one*
Javanese (o.)	sa siji
Javanese (c.)	satunggil
Javanese (a.)	heko
Malay	sa, satu
Bali	sa
Sunda	sa, seji
Lampung	sai
Biajuk	ije
Bugis	chedi
Timuri	eida
Friendly Islan.	tahaw
Majindanao	isa
Madagascar	eser, isa
Papua	oser

English	*two*
Javanese (o.)	loro
Javanese (c.)	kaleh
Javanese (a.)	dwi
Malay	dua
Bali	dua
Sunda	dua
Lampung	rua
Biajuk	duwe
Bugis	dua
Timuri	rua
Friendly Islan.	lua
Majindanao	daua
Madagascar	roaa, roé
Papua	serou

English	*three*
Javanese (o.)	tălu
Javanese (c.)	tigo
Javanese (a.)	tri
Malay	tiga
Bali	tălu
Sunda	tilu
Lampung	talu
Biajuk	telo
Bugis	tălu
Timuri	tolo
Friendly Islan.	tolou
Majindanao	tulu
Madagascar	talu, telou
Papua	kior

English	*four*
Javanese (o.)	papat
Javanese (c.)	sakawan
Javanese (a.)	chator
Malay	ampat
Bali	papat
Sunda	opat
Lampung	pa
Biajuk	epat
Bugis	ăpa
Timuri	na-ah
Friendly Islan.	t' fa
Majindanao	apat
Madagascar	effutchs, effats
Papua	tiak

English	*five*
Javanese (o.)	limo
Javanese (c.)	gangsal
Javanese (a.)	poncho
Malay	lima
Bali	lalima
Sunda	lima
Lampung	lima
Biajuk	lime
Bujis	lima
Timuri	lema
Friendly Islan.	nima
Majindanao	lima
Madagascar	dime, luwi
Papua	rim

English	*six*
Javanese (o.)	nănăm
Javanese (c.)	——
Javanese (a.)	sad
Malay	anăm
Bali	năm
Sunda	gănăp
Lampung	nom
Biajuk	jebawen
Bugis	anang
Timuri	naem
Friendly Islan.	vano
Majindanao	anom
Madagascar	eanning, enem
Papua	onim

English	*seven*
Javanese (o.)	pitu
Javanese (c.)	——
Javanese (a.)	sapto
Malay	tuju
Bali	pitu
Sunda	tuju
Lampung	pitu
Biajuk	ʉju
Bugis	pitu
Timuri	hetu
Friendly Islan.	fidda
Majindanao	petu
Madagascar	fito, fitou
Papua	tik

English	*eight*
Javanese (o.)	wolu
Javanese (c.)	——
Javanese (a.)	hasto
Malay	dălapan
Bali	kutus
Sunda	dalapan
Lampung	walu
Biajuk	hanya
Bugis	arua
Timuri	walu
Friendly Islan.	varu
Majindanao	walu
Madagascar	varlo, valou
Papua	war

English	*nine*
Javanese (o.)	songo
Javanese (c.)	——
Javanese (a.)	nowo
Malay	sambilan
Bali	siya
Sunda	salapan
Lampung	siwa
Biajuk	jalatien
Bugis	asera
Timuri	sioh
Friendly Islan.	hiva
Majindanao	seaoiw
Madagascar	seve, sivi
Papua	siou

English	*ten*
Javanese (o.)	puluh
Javanese (c.)	doso
Javanese (a.)	doso
Malay	puluh
Bali	dasa
Sunda	puluh
Lampung	puluh
Biajuk	pulo
Bugis	pulo
Timuri	nulu
Friendly Islan.	ongo-furu
Majindanao	pulu
Madagascar	folo, foulo
Papua	samfoor

English	*eleven*
Javanese (o.)	sawălas
Javanese (c.)	——
Javanese (a.)	——
Malay	sablas
Bali	solas
Sunda	sawălas
Lampung	sablas
Biajuk	sablas
Bugis	sapulo-chedi
Timuri	sanulu-resai-
Friendly Islan.	[naida
Majindanao	
Madagascar	iraic foulo ambi
Papua	——

English	*twelve*
Javanese (o.)	rolas
Javanese (c.)	kalehwălas
Javanese (a.)	
Malay	duablas
Bali	roras
Sunda	duawălas
Lampung	talublas
Biajuk	duwe-wălas
Bugis	sapulo-dua
Timuri	sanulu-resai-rua
Friendly Islan.	
Majindanao	
Madagascar	roepulo ambi

English	*thirteen*
Javanese (o.)	tălulas
Javanese (c.)	tigowălas
Javanese (a.)	
Malay	tigablas
Bali	tălulas
Sunda	tăluwălas
Lampung	
Biajuk	telo-wălas
Bugis	sapulo tălu
Timuri	——
Friendly Islan.	
Majindanao	
Madagascar	folotalu ambe

English	*twenty*
Javanese (o.)	rongpuluh
Javanese (c.)	kalehdoso
Javanese (a.)	——
Malay	duahpuluh
Bali	duangdasa
Sunda	duahpuluh
Lampung	ruangapuluh
Biajuk	duwepulo
Bugis	duapuluh
Timuri	ruanuluh
Friendly islan.	
Majindanao	
Madagascar	roaafolo
	[roepalo

English	*twenty-one*
Javanese (o.)	rongpuluh siji
Javanese (c.)	kalehdoso
Javanese (a.)	——[satunggil
Malay	duapuluh satu
Bali	salikur
Sunda	duapuluh-seji,
Lampung	——[salikur
Biajuk	durvepulo ije
Bugis	duapulo chedi
Timuri	——
Friendly Islan.	
Majindanao	
Madagascar	——

English	*twenty five*
Javanese (o.)	limolikur
Javanese (c.)	gangsallikur
Javanese (a.)	——
Malay	duapuluh lima
Bali	limalikur
Sunda	duapuluh lima
Lampung	——
Biajuk	——
Bugis	duapulo lima
Timuri	——
Friendly Islan.	
Majindanao	
Madagascar	rowafolo dime [amby

English	*thirty*
Javanese (o.)	tălungpuluh
Javanese (c.)	tigangdoso
Javanese (a.)	——
Malay	tigapuluh
Bali	tălungdasa
Sunda	tilupuluh
Lampung	talungapuluh
Biajuk	telopulo
Bugis	tălupulo
Timuri	tolonulu
Friendly Islan.	
Majindanao	
Madagascar	telou paulo

English	*thirty-one*
Javanese (o.)	tălungpuluh siji
Javanese (c.)	tigongdoso
Javanese (a.)	——[satunggil
Malay	tigapuluh satu
Bali	——
Sunda	tilupuluh seji
Lampung	tălungapuluh
Biajuk	tolopulo ije
Bugis	tălupulo chedi
Timuri	tolonulu eida
Friendly Islan.	
Majindanao	
Madagascar	

English	*thirty-five*
Javanese (o.)	tălungpuluh lima
Javanese (c.)	kawansasor
Javanese (a.)	——
Malay	tigapuluh
Bali	tălungdasa lima
Sunda	tilupuluh lima
Lampung	tălungapuluh
Biajuk	telopulo telo
Bugis	tălupulo lima
Timuri	tolonulu lima
Friendly Islan.	
Majindanao	
Madagascar	talupolo dime [amby

English	*forty-five*
Javanese (o.)	patpuluh limo
Javanese (c.)	kawandoso
Javanese (a.)	——[gangsal
Malay	ampatpuluh
Bali	papatdasa [lima
Sunda	opatpuluh lima
Lampung	pangapuluh
Biajuk	epatpulo limeh
Bugis	apapulo lima
Timuri	naahnulu lema
Friendly Islan.	
Majindanao	[amby
Madagascar	effuchfolo dime

English	*fifty*
Javanese (o.)	sekăt
Javanese (c.)	gangsaldoso
Javanese (a.)	———
Malay	limahpuluh
Bali	limangdasa
Sunda	limapuluh
Lampung	sawi
Biajuk	limehpulo
Bugis	limapulo
Timuri	lemanulu
Friendly Islan.	
Majindanao	
Madagascar	dimefolo

English	*fifty-five.*
Javanese (o.)	ewidak sasor
Javanese (c.)	gangsaldoso
Javanese (a.)	———[gangsal
Malay	limapuluh lima
Bali	limangdasa
Sunda	limapuluh lima
Lampung	sawi lima
Biajuk	limehpulolimeh
Bugis	limapulo lima
Timuri	lemanulu lema
Friendly Islan.	
Majindanao	
Madagascar	dimefolo dime [amby

English	*sixty*
Javanese (o.)	swidak
Javanese (c.)	nămdoso
Javanese (a.)	———
Malay	anampuluh
Bali	nămdasa
Sunda	gănăppuluh
Lampung	sawidak
Biajuk	jebawenpulo
Bugis	anangpulo
Timuri	naennulu
Friendly Islan.	
Majindanao	
Madagascar	eanningfolo

English	*sixty-five*
Javanese (o.)	pitusasor
Javanese (c.)	nămdoso
Javanese (a.)	———[gangsal
Malay	nămpuluh lima
Bali	nămdasa lalima
Sunda	gănăppuluh lima
Lampung	sawidak lima
Biajuk	jebawenpulo
Bugis	anangpulo lima
Timuri	naennulu lema
Friendly Islan.	
Majindanao	
Madagascar	enningfolo dime [amby

English	*seventy-five*
Javanese (o.)	wolusasor
Javanese (c.)	wolungdoso
Javanese (a.)	
Malay	tujupuluh lima
Bali	pitu-dasa lalima
Sunda	tujupuluh lima
Lampung	pitungapuluh
Biajuk	ujupulo limeh
Bugis	pitupulo lima
Timuri	hetunulu lema
Friendly Islan.	
Majindanao	
Madagascar	fitofolo dime [amby

English	*hundred*
Javanese (o.)	hatus
Javanese (c.)	
Javanese (a.)	soto
Malay	ratus
Bali	hatus
Sunda	ratus
Lampung	ratos
Biajuk	ratus
Bugis	ratu
Timuri	atus
Friendly Islan.	tehou
Majindanao	alos
Madagascar	zawto, zatou
Papua	samfoor utin

English	*two hundred*
Javanese (o.)	rongatus, hatak
Javanese (c.)	kalch atus
Javanese (a.)	
Malay	dua ratus
Bali	hatak
Sunda	dua ratus
Lampung	rua ratos
Biajuk	duwe ratus
Bugis	dua ratu
Timuri	rua-atus
Friendly Islan.	
Majindanao	
Madagascar	roaa zawto

English	*four hundred*
Javanese (o.)	papat-atus, mas
Javanese (c.)	kawan-atus
Javanese (a.)	———
Malay	ampat ratus
Bali	mas
Sunda	opat ratus, mas
Lampung	pa ratos
Biajuk	epat ratus
Bugis	ăpa ratu
Timuri	naah atus
Friendly Islan.	
Majindanao	
Madagascar	effuch zawto

English	*eight hundred*
Javanese (o.)	wolung atus
Javanese (c.)	———
Javanese (a.)	———
Malay	dălapan ratus
Bali	do-mas
Sunda	dălapan ratus
Lampung	walu ratos
Biajuk	hanya ratus
Bugis	arua ratus
Timuri	walu atus
Friendly Islan.	
Majindanao	
Madagascar	varlo atus

English	*thousand*
Javanese (o.)	hewu
Javanese (c.)	
Javanese (a.)	sasra
Malay	rebu
Bali	iwu
Sunda	rewu
Lampung	paku
Biajuk	rebu
Bugis	săbu
Timuri	
Friendly Islan.	kiru
Majindanao	libu
Madagascar	arevo, arivou
Papua	samfoor, utin [samfoor

English	*myriad*
Javanese (o.)	lăkso
Javanese (c.)	
Javanese (a.)	lăkso
Malay	lăksa
Bali	laksa
Sunda	———
Lampung	sapuluh paku
Biajuk	laksa
Bugis	lasa
Timuri	———
Friendly Islan.	lau vari
Majindanao	laksa
Madagascar	

English	*hundr. thous.*
Javanese (o.)	kăti
Javanese (c.)	
Javanese (a.)	kăti
Malay	kăti
Bali	kăti
Sunda	kăti
Lampung	laksa
Biajuk	———
Bugis	kăti
Timuri	———
Friendly Islan.	lau noa
Majindanao	kăti
Madagascar	

English	*million*
Javanese (o.)	yuto
Javanese (c.)	
Javanese (a.)	yuto
Malay	yuta
Bali	yuta
Sunda	——
Lampung	——
Biajuk	——
Bugis	——
Timuri	——
Friendly Islan.	
Majindanao	——
Madagascar	—— alon

English	*thous. millions*
Javanese (o.)	părti
Javanese (c.)	——
Javanese (a.)	părti
Malay	——
Bali	——
Sunda	——
Lampung	——
Biajuk	——
Bugis	——
Timuri	——
Friendly Islan.	
Majindanao	——
Madagascar	——

English	*ten millions*
Javanese (o.)	wăndro
Javanese (c.)	
Javanese (a.)	wăndro
Malay	——
Bali	——
Sunda	——
Lampung	——
Biajuk	——
Bugis	——
Timuri	——
Friendly Islan.	
Majindanao	——
Madagascar	——

English	*ten thous. mill.*
Javanese (o.)	părtomo
Javanese (c.)	
Javanese (a.)	părtomo
Malay	——
Bali	——
Sunda	——
Lampung	——
Biajuk	——
Bugis	——
Timuri	——
Friendly Islan.	
Majindanao	——
Madagascar	——

English	*hundr. millions*
Javanese (o.)	boro
Javanese (c.)	
Javanese (a.)	boro
Malay	——
Bali	——
Sunda	——
Lampung	——
Biajuk	——
Bugis	——
Timuri	——
Friendly Islan.	
Majindanao	——
Madagascar	——

English	*hun.thous.mill.*
Javanese (o.)	gulmo
Javanese (c.)	
Javanese (a.)	gulmo
Malay	——
Bali	——
Sunda	——
Lampung	——
Biajuk	——
Bugis	——
Timuri	——
Friendly Islan.	
Majindanao	——
Madagascar	——

English	*billions*
Javanese (o.)	kerno
Javanese (c.)	
Javanese (a.)	kerno
Malay	
Bali	
Sunda	
Lampung	
Biajuk	
Bugis	
Timuri	
Friendly Islan.	
Majindanao	
Madagascar	

English	*ten billions*
Javanese (o.)	wurdo
Javanese (c.)	
Javanese (a.)	wurdo
Malay	
Bali	
Sunda	
Lampung	
Biajuk	
Bugis	
Timuri	
Friendly Islan.	
Majindanao	
Madagascar	

Having rendered this account of the numerals of the Indian islanders, I shall proceed to give a brief sketch of their measures of capacity,—of bulk,—of gravity, and of extent; concluding with an account of their money or other standards of exchangeable value. On all these subjects, we discover the same rudeness which characterizes their other institutions and their manners. As we find them obliged to strangers in their higher improvements, so on these humbler matters also their only precise views are from foreigners.

In the native measures, every thing is estimated by bulk, and not by weight. Among a rude people, corn would necessarily be the first commodity, the value of which would render it a matter of necessity and convenience to fix some measure for its exchange or barter. The manner in which this is effected among the Javanese will point out the im-

perfection of their methods. Rice, the principal grain, is in reaping nipped off the stalk, with a few inches of the straw, tied up in sheaves or parcels, and thus housed and sold, or otherwise disposed of. The quantity of rice in the straw, which can be clenched between the thumb and middle finger, is called a *Găgăm* or handful, and forms the lowest denomination. Three *găgăms* or handfuls make one *Pochong*, the quantity which can be clenched between both hands joined. This is properly a sheaf. Two sheaves or *Pochongs*, joined together, as is always done for the convenience of being thrown across a stick for transportation, make a double sheaf or *Gedeng*. Five *Gedengs* make a *Songgo*, the highest measure in some provinces, or twenty-four make a *Hamat*, the more general measure. From their very nature, these measures are indefinite, and hardly amount to more accuracy than we imply ourselves, when we speak of sheaves of corn. In the same district, they are tolerably regular in the quantity of grain and straw they contain; but such is the wide difference between different districts or provinces, that the same nominal measure is often twice, nay three times, as large in one as in another. For the *Hamat* or larger measure, perhaps about eight hundred pounds avoirdupois, might be considered as a fair average for the different provinces of Java. This

may convey some loose notion of the quantities intended to be represented.

For dry and liquid measures, they have very naturally recourse to the shell of the coco-nut, and the joint of a bamboo, which are constantly at hand. The first, called by the Malays a *Chupa*, is estimated to be two and a half pounds avoirdupois. The second is called by some tribes *kulah*, and is equal to a gallon; but the most common bamboo measure is the *Gantung*, which is twice this amount.

To those exact and business-like dealers, the Chinese, and in a less degree to the Arabs and people of the east coast of the Indian peninsula, the Indian islanders are chiefly indebted for any precision which we find in their weights. In all the traffic carried on between the commercial tribes and foreigners, the Chinese weights, though occasionally under native names, are constantly referred to. The lowest of these, called sometimes by the native name of *Bungkal*, but more frequently by the Chinese one *Tahil*, varies from twenty-four pennyweights nine grains to thirty pennyweights and twenty-one grains. Ten of these make a *kati*, or about twenty ounces avoirdupois; one hundred *katis* make a *pikul*, or 133$\frac{1}{3}$ lbs. avoirdupois; and thirty pikuls one *koyan*. Of these, the *kati* and *pikul*, because they are constantly referred to in considerable mercantile dealings, are the only well

defined weights. The *koyan* by some is reckoned at twenty *pikuls*, by others at twenty-seven, twenty-eight, and even at forty. The Dutch are fond of equalizing it with their own standards, and consider it as equal to a last or two tons.

The *Bahara*, an Arabic weight, is occasionally used in weighing pepper; but its amount is very indefinite, for in some of the countries of the Archipelago it amounts to 396 lbs. avoirdupois, and in others to 560 lbs.

The nice operation of weighing gold, the only native commodity which could not be estimated by tale or bulk, must have given rise to the use of weights even among the natives themselves. Grains of rice are still occasionally used in weighing gold in the neighbourhood of the gold mines of Sumatra. Whatever those were, they have now been generally superseded by the more convenient processes of foreigners. In this department, they seem to have been chiefly indebted to the Telingas, who instructed them in the use of the touchstone and the scale of ten test needles, (*mutu.*) From them, too, they have probably borrowed the use of the *Saga*, *Retti*, or Indian pea, as a weight, and even the *Tahil*, though usually considered a Chinese denomination, which, in weighing gold, is conveniently reckoned at two Spanish dollars weight. Twenty-four of the scarlet peas, with a black spot, (*ra-*

kat,) make one *Mas*, and sixteen *Mas* make a *Tahil*. These weights are certainly Hindu. The Rakat is the Raktika or Retti, the *Mas* evidently the *Masha*, and the *Tahil* the Tolaca or Tola. The corruptions those words have undergone show, that, unlike others of Hindu origin, they have not been borrowed from the pure fountain of the Sanskrit. *

The foreign origin of the weights used by the Indian islanders will be obvious enough from a recapitulation of the terms used. The balance is derived from the western Asiatics, as its name *Trazu* or *Traju* implies. The Steelyard, as its name *Dachin* imports, is taken from the Chinese. The *Kati* is a Chinese word, and the *Pikul* is strictly a Chinese weight, as its amount exactly shows, though the term happens in this case to be native. Its meaning, in the vernacular languages, is a natural load or burthen ; and when used in this primitive sense, without reference to the Chinese weights, is not found to exceed eighty pounds avoirdupois.

The long measures in use among the inhabitants of the Archipelago are still more undefined than their measures or weights. Like all other people, the terms they employ are borrowed from the parts or members of the human body, as *an inch*, a

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* " Colebrook's Treatise on the Weights and Measures of the Hindus."—*Asiatic Researches*, Vol. V.

finger, a *span*, a *cubit*, a *fathom*, a *foot*; and the *Changkal*, the highest member of the scale, which implies the utmost length of the human body, from the extremity of the foot of one side to that of the hand of the opposite. None of these measures are reduced in any country of the Archipelago to any precise or determined standard. From the great utility of the cubit, and its Sanskrit name, (*hasta*,) I suspect that the Hindus may have, at one period, used this measure with more accuracy.

In countries where there are no roads, where the principal conveyance is by water, and where the paths are circuitous and little frequented, it is not reasonable to suppose that any determinate measure of considerable distances should exist. Such contrivances, although so familiar to Europeans, are the result of much improvement and civilization. The Indian islanders, in travelling, speak of a day's journey, which, with tolerable uniformity, may be reckoned at twenty British miles. By pointing to the situation of the sun, when they begin and end a journey, they convey some notion of the distance they have travelled. The Javanese, who perform, from the nature of their country, the most frequent journeys by land, sometimes compute distances by the stages at which a traveller carrying a burthen halts to rest himself. These, which may be reckoned about two miles and a half, they designate by the term

Unjutan. In their writings, but there only, we find mention made of the Indian *Yujana.*

The modes of reckoning the superficial extent of cultivated land (uncultivated they think no more of computing than the skies that are over them) is subject to the same vagueness as the rest of their measures; and here, from the character of the intercourse which they have always had with the strangers, who, in different periods of their history, have been connected with them, they have received no assistance. Those strangers were chiefly occupied in commerce and religion. As rulers, they were either not civilized enough, or not powerful enough, to introduce useful improvement; and as colonists, they were never numerous enough to take a principal share in the immediate culture of the soil.

In the measurement of lands, it has been stated that waste and forest lands are not computed. In general, the same remark may be extended to all cultivated lands of inferior value, that is, to dry arable lands. In most parts of Java, it is the valuable lands, those which, either by natural or factitious means, can be subjected to the fertilizing process of submersion, that alone are deemed worthy of being subjected to the rude and loose standard in use. The progress of this matter may be curiously traced as improvement advances. The Sundas or mountaineers of Java use the indefinite expression

Luwak, in reference to the measurement of land; and the Javanese, the term *Kota-an*, neither of which is a bit more precise than if we were to speak of a *field* or *a park*. At other times we hear of the land being estimated by the number of yokes of buffaloes necessary for its cultivation. The Sundas term this a *panchas*, and the measure, it may be observed, is similar to what is called in some parts of Britain a *plough-land*. The estimated produce in rice is another mode of reckoning among the same people. The term *Chaing* expresses alike in their language a measure of rice, varying in different districts from about 1000 to 4000 lbs., and the quantity of land calculated to yield such amount. The natives of the island of Bali, on the other hand, reckon by the seed, and talk of so many seed-lands. The term which they use is *wini*, which implies *a sheaf of seed-corn*.

In the progress of society and despotism we find no longer the existence of a private right of property in the soil, but the land belonging to the sovereign, and the cultivator attached to it predially. This has given rise among the Javanese to the division of land called a *Chachah*, explained by the synonym *Garwe-ning-wang*, or "a man's labour." The word *Chachah* literally imports count or *census* in the vernacular language; and this mode of measurement has reference to an enumeration of the people made at some ancient

period, with the view of a fiscal arrangement. The *chach ah* is multiplied by 25, and its duplexes upwards to many thousands. The words applied to such terms are the common numerals of the language, and give us at once—the amount of the land,—of its supposed population,—and the rank and income of the officer that presides.

The only measurement among these people which has reference to the area of the land, is the Javanese *jung*, and its fractional parts proceeding on the binary scale of computation, down to one-sixteenth. The literal meaning of the word *jung*, in the Javanese language, is a large boat or vessel, and its application in the present instance may have some fantastic allusion to the corresponding immersion of the land in the element of water. Its principal fractions, as mentioned in another place, are denominated *kikil*, a leg or great member, that is, one-half; and *bahu*, a shoulder, or small member, that is, one-fourth.

Although the *jung* be a measure of the area of the land, its amount is not fixed in any one province, and differs widely in different provinces. Sometimes the *paseban*, or court-yard, before the palaces of the native princes, which are said to contain two *jungs*, are considered the standard, but these are themselves unequal. When measurements have been actually attempted, the legal standard is considered to be the staff-stick of the

barwat, or state umbrella of the superior chief, but these again vary in length from nine to twelve feet!

It remains to offer some account of the metallic currency, or other standards of exchangeable value, employed by the Indian islanders. The most marketable article of their native produce appears among the Indian islanders, as in other rude periods of society, to have been first employed in their commerce. Many of the ruder tribes still continue to employ such articles in their dealings, but coins, either native or foreign, have long been used by the more improved. Some of the rude tribes of Sumatra, Borneo, and other islands, employ, as a standard of value, cakes of benjamin, or of bees'-wax. Salt, when scarce, is used by others. Gold dust is used by the tribes in whose country this precious metal abounds. The improved agricultural tribes in their early history seem to have used cattle and corn for this purpose. This was the case with the Javanese. In the countries which produce tin, this metal seems naturally enough to have been had recourse to as coin. A few coins of it are occasionally found in Java; and the *pichis*, a tin coin, still forms the small currency of several states, as Palenbang, Achin, Bantam, Cheribon, and Queda. The pichis are small irregular *lamina*, with a hole in the middle for the convenience of being strung. Five thousand six

hundred of this minute coin are considered equal to a Spanish dollar. A brass coin, impressed with a number of fantastic figures and characters, which are at present unintelligible, formed the most ancient money of Java, and great numbers of them are still, from time to time, to be found. This was the currency of the Buddhist sovereigns, whose empire was at *Mojopahit*. The Mahomedans who succeeded them coined a smaller money of the same metal, on which is inscribed, in a circular direction, in the Javanese characters, the words "*Pangeran Ratu*," or the Sovereign Prince. This refers to *Pangeran Săbrang Ler*, a chief who reigned at *Dămak* in the beginning of the sixteenth century. The Chinese and Japanese appear to have early introduced their brass coins into the Archipelago, and these became current under the name of *Kăngtang*. Many of them are found in the ruins of ancient buildings in Java; and in the island of Bali they are still the current and only coin.

The poverty and barbarism of the ancient natives of the Archipelago is proclaimed by their ignorance of the precious metals as money. Among the extensive and curious variety of ancient relics which Java has afforded, and particularly when a great variety of brass and tin coins has been found, no gold coin has ever been discovered, and silver coins only on one or two occasions. In 1814,

while chief of the province of Samarang, a quantity of the latter, contained in a small vessel of earthenware, was, for the first time, brought to myself, found near some Hindu ruins in the same district. They consisted of small button-shaped pieces, convex on one side, and concave on the other. Some rude characters are impressed on both sides, but too much defaced to be intelligible. Mr Marsden informs me that they bear much resemblance to some ancient Hindu coins in his possession. Near the same situation a second supply of the same coins was afterwards found. This proves nothing but the intercourse which the Hindus of the Deccan had with Java in early times; a fact determined by other and abundant evidence of a more satisfactory nature.

The Mahomedans, shortly after establishing their religion in the Archipelago, seem to have taught the natives the use of gold as a coin. All the gold coins which we discover are stamped with Arabic letters, and bear the names of the Mahomedan sovereigns by whom they were coined. Coins of this description were struck at Achin, Queda, and Macassar, termed *mas* from the name of the metal. In Achin, the greatest of all the commercial states of the Archipelago, the current coins were *pichis* and *mas*, 1500 of the former being equal to one of the latter, which was itself equal to fifteenpence sterling. The value of the

precious metal seems, among the Achinese, to have been estimated in larger quantities, not by tale, but weight, or, at least, no coins existed beyond the *mas*. Five tahils made a *bungkal*, and twenty bungkals one *kati*.

On the subject of their coins, the natives of the Archipelago display the same facility in adopting the institutions of other people, which marks the rest of their character, and which always distinguishes them in so remarkable a manner from all the civilized nations of Asia, but especially the Hindus. The Javanese had hardly been acquainted with the Hollanders in the reign of the second prince of the house of Mataram, when they adopted the Dutch doit, which has ever since continued to be the smaller currency of the island. As the principal money of the Archipelago, the Spanish dollar, or piece of eight, has long been established. From its Dutch name *pasmat*, a corruption of "*Spanish mat*," Spanish piece, we may presume that the Hollanders were chiefly instrumental in introducing it. Besides the Spanish dollar, almost every silver or gold coin of Europe, Asia, or America, may be found in circulation in the Indian islands. This distracting variety of coins, which chiefly prevails in Java, ought to be banished. The Spanish dollar, and its fractional parts, with a copper currency of *cents* and *half cents* would be substituted with great convenience and advantage.

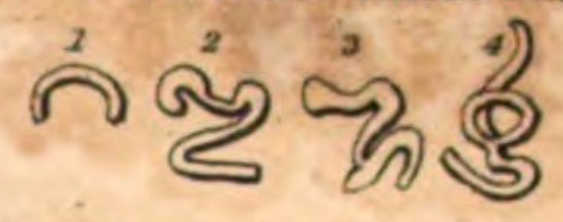
Of late years, the European governments of Java made various injudicious attempts to establish a paper currency in that island. The want of credit and stability in these governments themselves, and the excessive issues of notes, occasioned to the public the greatest confusion and distress. The notes were often at a discount in the market, which reduced them to a fifteenth part of their nominal value. The establishment of a paper currency, notwithstanding these failures, would be productive of much advantage as a measure of economy to the state, and of facility and dispatch in commercial transactions. In framing regulations for such currency, the ignorance, supineness, and inexperience of the great bulk of the native population should be considered. The notes should be confined to large payments,—they should be convertible into gold or silver at pleasure,—they should be fabricated with a skill adequate to defeat the clumsy forgeries of the Chinese; and the inscription might, as well with this view, as for general information, be in the Chinese, in two native languages, and an European one.

Signs of the Javanese Week of Five Days and Digits.

Engraved by W. H. Lizars

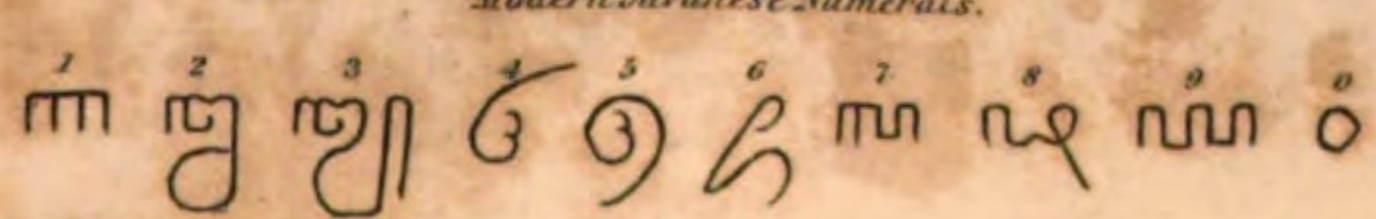
Specimen of Ancient Javanese Numerals.

1 2 3 4



Modern Javanese Numerals.

1 2 3 4 5 6 7 8 9 0



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CHAPTER II.

CALENDAR.

Formation of a calendar makes a certain step in the progress of civilization among all nations.—Javanese, the only nation of the Archipelago that had a national calendar.—Javanese divisions of the day.—Week of five days.—Week of seven days.—Civil year.—Rural year; description of it.—Hindu calendar and era.—Era of Salivana still current in the island of Bali.—How modified by the Javanese.—Lunar time of the Arabs, adopted by all the tribes converted to Mahomedanism except the Javanese.—Cycles.—Eclipses.—Calendar of the Bugis of Celebes.

An attention to the division of time, and the formation of a calendar, appear in all nations, and among all tribes, to characterize a certain early period of the progress of civilization. This period appears to be that in which religion begins to acquire a powerful ascendancy over the minds of men, and the national worship to assume a systematic form. An attention to the motions of the heavenly bodies, and the regulations of the seasons, becomes in such a state of society a powerful instrument in the hands of the priesthood; and it is certainly from this cause that the science of astronomy receives an attention, which, in so rude a state of society, appears otherwise premature. Religious motives gave rise then, in

all likelihood, to the formation of a calendar among the early Romans, the early Greeks, the Egyptians, the Hindus, and Chinese, the most distinguished barbarians of the old world. On the same principle, the most civilized nations of America had also their calendars, the Aztecs of Mexico, the Peruvians, and the Muyscas of the plains of Bogota. Turning to the nations whose history and manners I am writing, we find an exactly parallel case. The Javanese, the most civilized nation of the Archipelago, had their distinct national calendar.

It is probable, that the first calendar of all the nations, whose names I have enumerated, was invented among themselves; but that, in the progress of the intercourse of mankind, that of foreigners was superadded. With respect to the calendar of the Javanese, language affords the most unquestionable evidence of this fact; and it is probable, that a similar explanation will account for the perplexities of the Hindu calendar, which has borrowed so largely from the Greek, of the Greek which borrowed from the Egyptian, and of the Chinese which borrowed from the Hindu. With regard to these nations, language will not afford, I imagine, the same satisfactory evidence, for the Indian islanders received the language of their instructors from the purest and most uncorrupted channel; and their simplicity of character hindered them from disguising what they borrowed. The more un-

tractable idioms of the more civilized nations of the continent either rejected a foreign language altogether, or the pride and interests of more artful men led them to conceal the sources of their plagiarisms.

I shall now proceed to render an account of the Javanese calendar. The division of time among the Javanese is partly native, partly Hindu, and partly Arabic; we may even add, that it is in some small part European. Of the different forms borrowed from these various sources some are in use, but many obsolete. The Javanese have no exact mode of dividing the day, and neither gnomon, hour-glass, or other contrivance for ascertaining diurnal time. With reference, I imagine, to the quinary scale of notation, they divide the day into the following ten natural, but vague and unequal subdivisions: *morning*, *forenoon*, *noon*, *afternoon*, *decline of the day*, *sunset*, *evening*, *night*, *midnight*, *decline of night*. The vernacular language has specific names for each of these. The civil day of the Javanese thus commences with sunrise. For astrological purposes, the day of twenty-four hours is divided into five parts, of each of which a principal deity of the Hindu mythology is the regent. Reference to the usual period of performing the most important of the familiar occupations of the husbandmen are not unfrequent modes of

referring to the hour of the day. Thus, they say, "when the buffalo is sent to the pastures," "when the buffalo is brought back from his pasture," or "when the buffalo is housed," &c. But the most usual mode of all is by pointing to the situation of the sun in the heavens, when such and such an event took place, a practice sufficient for common purposes in latitudes where the length of the day and night is almost always nearly the same.* The mode of determining the hour of the day by the length of the shadow has not altogether escaped the observation of the Indian islanders, though it be not of familiar

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* "To denote the time of day at which any circumstance they find it necessary to speak of happened, they point with their finger to the height in the sky at which the sun then stood. And this mode is the more general and precise, as the sun so near the equator ascends and descends almost perpendicularly, and rises and sets at all seasons of the year, within a few minutes of six o'clock."—*Marsden's Sumatra*, p. 194.—"The epochas of the day and the night, which correspond nearly to our hours, 3, 9, 15, 21, astronomical time, had no particular times. The Mexicans, to denote them, pointed, as our labourers do, to the place of the sky where the sun would be in following his course from east to west; this gesture was accompanied by these remarkable words, *Is Teotl, there God will be;* an expression which recalls that happy period, when the people emigrated from Aztlan knew yet no other divinity than the sun, and were addicted to no sanguinary rite."—*Vues dans les Cordilleres des Andes, par Mon. Humboldt et Bonpland.*

application. In some of their written compositions, for example, I find a traveller described as setting out on a journey, or arriving at the end of it, when *his shadow was so many feet long!* Neither the Javanese nor any other of the tribes of the Archipelago have adopted the Arabian or Hindu subdivisions of the day. The European division of the day into hours, which they designate by the Persian word *Jam*, and into minutes and seconds, has some currency among them, and the more informed are aware of its convenience. With more intercourse it would be universally adopted.

The Javanese have a native week besides the usual week of seven days borrowed first from the Hindus and then from the Arabs. The original Javanese week, like that of the Mexicans, * consists of five days, and its principal use, like that of the

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* "Each Mexican month of twenty days was subdivided into four small periods of five days. At the beginning of those periods every commune kept its fair, *tianguiztli*. The Muyscas, a nation of South America, had weeks of three days. It appears that no nation of the new continent was acquainted with the week or cycle of seven days which we find among the Hindus, the Chinese, the Assyrians, and the Egyptians, and which, as Le Gentil has very justly observed, is followed by the greater part of the nations of the old world."—*Humboldt, Vues dans les Cordilleres des Andes.*

same people, is to determine the markets or fairs held in the principal villages or districts. This arbitrary period has probably no better foundation than the relation of the numbers to that of the fingers of the hand. The names of the days of this week are as follow: *Lăggi*, *Pahing*, *Pon*, *Wagi*, *Kliwon*. The etymology of these words would assist our researches, but such is their antiquity or obscurity, that, with the exception of the term *Lăggi*, which means *sweet*, and which interpretation is probably accidental, no vestige of their derivation is discoverable. The Javanese consider the names of the days of their native week to have a mystical relation to colours, and to the divisions of the horizon. According to this whimsical interpretation, the first means *white*, and the *east*; the second, *red*, and the *south*; the third, *yellow*, and the *west*; the fourth, *black*, and the *north*; and the fifth, *mixed* colour, and *focus*, or centre.

It is highly probable, that, like the week of the continental nations of Asia and Europe, the days were named after the national gods. In an ancient manuscript found in Java, which will be afterwards referred to, the week of five days is represented by five human figures, two of which are female, and three male. As far as can be conjectured from the rudeness of the representations,

two of the male figures are engaged in deeds of violence, the first seizing a suppliant by the hair of the head, and the second pointing a drawn sword at another. The third holds a spear in his hand, and is leading a bull, probably in reference to that great step in the progress of society implied by the taming of cattle. The two female figures seem engaged in peaceful occupations. One appears holding a shell or horn to receive an offering from a votary who is presenting it, and the other holds in her hand what appears some production of agricultural labour.

In reference to its application to the market-days this week is called *Păkănan*, which means market-time; occasionally we hear it called *Panchawara*, which implies in Sanskrit a period of five days, a name probably given to it in comparatively recent times, and in contradistinction to the Hindu week of seven days.

The Hindu week of seven days was once established in Java, and still prevails in the island of Bali. The following names of the days of which it is composed are almost purely Sanskrit, and confirm the identity.

Diti, or Daitya	Sunday
Soma	Monday
Angara	Tuesday
Budha	Wednesday

Wraspati	Thursday
Sukra	Friday
Sanischara	Saturday.

The different circumstances under which the Indian islanders and the nations of the continent of Asia and Europe adopted these terms for the days of the week, illustrates the different characters and states of society of the people. The same arbitrary number of this period,—the names of the days borrowed from the same mythological personages, and in the very same order, decide the identity of the week; but it requires some philological skill to determine that identity in the origin of the terms, which, with the civilized nations of the continent, are *translations*, but, with the simple tribes of the Archipelago, *literal transcripts*, which give us no trouble to decypher.

Except in reference to the markets, when the native week is constantly used, the Arabic week, the days of which are, as usual, called in their order by the ordinal numerals of that language, is at present current in Java, and every other Mahomedan country of the Archipelago.

Before the Javanese had any communication with the Hindus, they seem to have had *a civil* and *a rural calendar*. This curious fact we are enabled to ascertain from the evidence of language. From the innovations which we presume to have

been introduced by the Hindus, and from the imperfect knowledge transmitted to us respecting institutions, the greater portion of which have no longer any existence, much difficulty arises in determining the precise nature of these calendars. The slender knowledge I possess on this subject I shall lay before the reader, without attempting any general reasoning on a subject for which my knowledge is so incompetent.

The civil year appears to have been divided into thirty portions called *Wuku*, for each of which there was an appropriate name. These names have been handed down to us, and are purely native. They are now applied to no purpose but that of judicial astrology, and with this view the whole thirty are divided into six classes, while each individual *Wuku* has for its regent a deity of the Hindu mythology. The *Wukus* and their regents are as follow :

Wuku	*Regent*
1. Sinto	Yama
2. Landap	Mahadewa
3. Wukir	Kuwira
4. Kurantil	Purusangkara
5. Tolu	Bayu
6. Gumbrag	Chakra (Sakra)
7. Warig-alit	Asmara (Iswara)
8. Warig-agung	Pancharăsmi (Planet *Budh*)
9. Julung-wangi	Sambu

Wuku	*Regent*
10. Sungsang	Gana (Ganesa)
11. Galungan	Kamajaya
12. Kuningan	Uma
13. Langker	Kala
14. Mandasiya	Brahma
15. Julung-pujud	Maheswara
16. Pahang	Guritna
17. Kurulut	Wesnu
18. Marake	Suragana
19. Tambir	Siwa
20. Madangkungan	Angapati
21. Matal	Sakri
22. Wuye	Kuwera
23. Manahil	Chitragatra
24. Prangbakat	Bayu
25. Bala	Durga
26. Wuku	Singha-jalma
27. Wayang	Dewi Sri
28. Kulawu	Dărma raja
29. Dukut	Sukri
30. Watugunung	Antabaga & Naga-giri

It is remarkable that, in a language all the proper names of which are significant, we should hardly be able to trace a vestige of the derivation of the names of the *Wukus*. For astrological purposes the thirty wukus are divided into six periods, each of which is considered to be unpropitious to some portion of animal or vegetable nature. The *first* is considered unpropitious to man, the *second* to quadrupeds, the *third* to trees,

the *fourth* to birds, the *fifth* to seeds or vegetables, and the *sixth* to fishes. Each of these divisions has been said to consist of thirty-five days or seven Javanese weeks, which would make the ancient Javanese year a cycle of 210 days. I rather suspect that it consisted of twice that number, or 420, and that the *Wukus* expressed fortnights or half lunations. This interesting point would be determined by investigations conducted in the island of Bali, where I have reason to believe that this civil, or rather ritual year or period still obtains. When I visited it, I regret that my previous information did not enable me to enter upon the investigation. The eleventh and twelfth *Wukus* are also the names of the two great Balinese festivals, which follow each other at short intervals. They are periods of joy and festivity; and it will be seen, that, in the list of the *Wukus*, they are appropriately under the protection of the Hindu *Cupid* and *Venus*.

The rural or rustic year of the Javanese is much better known than the civil or religious one. This year, in fact, still obtains in Bali and Java, as applied to agricultural economy. It is an embolimic year of 360 days, divided into months or rather *seasons*, (*Mangsa* in the Javanese language,) twelve in number of unequal lengths. These seasons are as follows:

	Days.
Koso, or the 1st, consists of	41
Karo, or the 2d,	23
Katigo, or the 3d,	24
Kapat, or the 4th,	24
Kalimo, or the 5th,	26
Kanam, or the 6th,	41
Kapitu, or the 7th,	41
Kawolu, or the 8th,	26
Kasongo, or the 9th,	25
Kasăpuluh, or the 10th,	25
Dăsto, or the 11th,	23
Sodo, or the 12th,	41

The first ten of these terms are the ordinal numerals of the vernacular language of Java, which certifies the indigenous origin of this calendar. The terms for the eleventh and twelfth seasons are, however, not the corresponding numerals of the Javanese, and their etymology has escaped my research. I had expected to have found them Sanskrit, but am assured, on a high authority,* that to this source they cannot very obviously be traced. Did the year of the Javanese, at its first institution, consist like that of the Romans of ten months or seasons only, and were the two additional seasons added by the Brahmins to make the year correspond with their own? This rustic calendar prevails in Bali as well as in Java, but it is remark-

* Mr H. T. Colebrooke.

Fig. 1.

Fig. 2.

Drawn & Engraved by W.H.Lizars.

Fig. 1. ANTIQUE METALLIC BOWL, IN THE AUTHOR'S POSSESSION, FOUND IN JAVA.

Fig. 2. FIGURES on the BOWL, the second line representing the signs of the Zodiac, and the first line being supposed to represent the signs of the Javanese Months or Seasons.

able, that, in the former, the year is made to commence with the *eleventh* season, instead of that which is first in *numerical* order. According to the Javanese arrangement of the seasons, the year is made to commence with the winter solstice; and I presume that the Brahmins of Bali throw its beginning back to April, to make it correspond with the Hindu year. It is well known that, about the period of the establishment of the Mahomedan religion in Java, a new form of Hinduism was introduced in Bali, that the Brahmins must consequently have acquired new influence, and may be conjectured, therefore, to have improved or innovated upon the calendar.

That the Javanese were the inventors of this rural calendar is determined by its application to their climate, and to the peculiar modifications of the seasons, which is applicable to no other great country of the Archipelago. The evidence afforded by language is still more precise. In Bali, an island in the same parallels of latitude, and with corresponding seasons, the seasons are of the same length, and the arrangement, except in the particular already alluded to, the same as in Java, but the names of the seasons are not designated from the vernacular language of Bali, but from that of Java.

From the description of the rural economy of

the people, we conclude, that, at the period of the invention of the calendar, the Javanese had acquired considerable skill in agriculture. The seasons are principally determined by the culture of the most improved branch of their husbandry, the great rice crop, cultivated in the hot plains on the level of the sea.

The following brief description of the character of the seasons, and the occupations of the husbandman, are almost literally translated from the writings of the natives.

The *first* season is characterized by the falling of the leaves. Let the husbandman burn the dry grass, and cut down the trees, for the cultivation of the mountain rice, (*Humah.*)

The *second* season is characterized by the commencement of vegetation.

In the *third* season wild plants are in blossom. Let the husbandman occupy himself in planting the yam, pulses, and other secondary crops.

The *fourth* season is the season of love, or of the congress of sexes with wild animals. In this season high winds prevail, and the rivers begin to swell.

In the *fifth* season, let the husbandman prepare the implements of husbandry preparatory to the great rice culture, and let him adjust the watercourses, and repair the dikes.

In the *sixth* season, let the husbandman employ himself in ploughing, and in sowing the great rice crop.

In the *seventh* season, let him transplant the rice, and adjust the water-courses.

In the *eighth* season, the rice plants begin to blossom, and rise to the height of the dikes of irrigation.

In the *ninth* season, the seed forms in the rice plants.

The *tenth* season is characterized by the rice turning yellow, and beginning to ripen.

In the *eleventh* season, the rice crop is ripe, and harvest commences.

In the *twelfth* season the cold weather or winter begins, and the rice harvest is finished and housed.

Although the divisions of the rural year are founded in a good measure on the character of the seasons, and display a minute acquaintance with them, the arrangement is still in some degree arbitrary, for, on inspection, it will be seen that the first and last seasons, and so on in this order with the rest, exactly correspond, except in the third and ninth, and the fourth and tenth, where there is a discrepancy of one day.

To determine the seasons is the business of the Brahmins in Bali, and of the village priests in

Java. This is done by a gnomon of rude construction, having a dial divided into twelve parts. This instrument, called a *Bănchet*, is represented in one of the plates.

A rural year, similar to the one now described, appears to have at one time prevailed in Sumatra,* and was probably a modification of that of Java.

The Hindus of the Deccan introduced into Java and Bali, and most probably into Sumatra also, their calendar and eras. The civil year in Bali is at present the lunar embolimic year of *Saka* or *Salivana*, as its name, borrowed from the Sanskrit, distinctly implies, *(Saka warsa chandra.)* The months are lunar months, considered as subdivisions of the solar year. The year of *Saka* in Bali

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* In some districts much confusion in regard to the period of sowing is said to have arisen from a very extraordinary cause. "Anciently," say the natives, "it was regulated by the stars, and particularly by the appearance (heliacal rising) of the *Bintang*, *Buniak*, or *Pleiades;* but, after the introduction of the Mahomedan religion, they were induced to follow the returns of the *Puasa*, a great annual fast, and forget their old rules. The consequence of this was obvious; for the lunar year of the Hegira being eleven days short of the sydereal or solar year, the order of the seasons was soon inverted; and it is only astonishing that its inaptness to the purposes of agriculture should not have been immediately discovered."—*Marsden's Sumatra*, p. 71.

agrees with the same era, as most commonly recognized in the Deccan, being seventy-eight years short of the vulgar time. This proves, that, in a period of three centuries and a half, during which the intercourse with the continent of India has been interrupted, the priests of Bali have performed the intercalation with accuracy.

In the days of Hinduism in Java the same era also obtained, and was even persevered in for 155 years after the introduction of Mahomedanism. In the year 1555 of Salivana, or 1633 of ours, in the reign of the *Great Sultan*, the lunar year of the Mahomedans was adopted, without adopting, at the same time, the year of the Hegira. The consequence is, that upwards of five years have been apparently added to the year of Salivana, and the present year 1742 of that era is the 1747 of the era of Java. This is similar to the change effected by the innovations of the Mahomedans in the era of the people of Bengal.

Vestiges of the existence of the months of the tropical year of the Hindus are to be discovered in some of the ancient monuments of Java, but they were probably never current. The months were perhaps always lunar, at least we find that the same term almost invariably expresses *month* and *moon* in every language of the Archipelago, and in every modification of dialect. Of the Hindu division of

the year into seasons of two months, (*rĭtu,*) and of the months into fortnights, (*pacsha,*) I can discover no relics among the Indian islanders.

In all the Mahomedan countries of the Archipelago except Java, the era of the flight of the prophet has been universally introduced, and every where the lunar time, and all its inconveniencies, with the Arabian names of the months and days of the week.

With respect to the cycles and periods of the Javanese and Balinese I have not much information to supply. The native term *Windu* expresses a cycle in the Javanese language. The first which I shall mention is a period of seven years, each year of which is distinguished, as by the Siamese, the Tibetians, and others, by the names of animals.

These names are as follow :

Mangkara, the prawn.
Menda, the goat.
Kalabang, the centipied.
Wichitra, the worm.
Mintuna, the fish.
Was, the scorpion.
Maisha, the buffalo.

Most of these names are Sanskrit ; but, independent of this evidence, we may infer from the number *seven* the continental origin of this cycle, for we no where discover among the natives of the In-

dian islands a predilection for that number. This Hindu period is now current under an Arabian form, each year being recognized by a letter of the Arabic alphabet. This, then, in its present form, is the Arabic *week of years*.

The next cycle is one of twelve years, taking its name from the twelve signs of the zodiac. The Javanese and people of Bali received this division of the eclyptic from the Hindus; but the only use they appear to have made of it is to give name to the years of this cycle of twelve years, which are as follows: *Mesa*, *Mrisa*, *Mituna*, *Karkata*, *Singha*, *Kanya*, *Jula*, *Wrichika*, *Danu*, *Makara*, *Kumba*, *Mina*. These, with no extraordinary deviation of orthography, are Sanskrit, and as their names in that language import, are represented by a ram, a bull, a crab, a lion, a virgin, a balance, a scorpion, a bow and arrow, a prawn, a water-pot, and a fish. The only anomaly regards the sign gemini or the twins, which is represented in the Javanese signs by a butterfly. In 1813, I discovered an ancient manuscript in Cheribon, containing representations of these signs, and a great number of copper cups, having figures of them in relief, have been found in the central and eastern provinces of Java. Besides the signs of the zodiac, we find represented upon these a variety of symbolical figures which cannot be decyphered, some of men and some of animals.

Two other cycles, one of twenty and one of thirty years, are mentioned by the Javanese. It is probable that the first is a native period, founded upon some revolution of the smaller divisions of their time. The last is the great cycle of the Mahomedans. The Hindu cycle of sixty years is not, to my knowledge, known to any of the Indian islanders.

Of the *Yugas* or great fabulous ages, or periods of the Hindus, the Indian islanders know little more than the names, and the legendary circumstances connected with them. These names, as the Indian islanders pronounce them, are as follow: *Karta-yoga*, *Treta-yoga*, *Dwa-para-yoga*, and *Kali-yoga*. The specific duration of each is not given, but the moderate period,—moderate if compared with the extravagance of the Hindu calculations,—of the whole is reckoned to be, to the present times, 16,767 years, or to the commencement of the era of *Saka*, 15,025 years.

I was informed in Bali, that the Brahmins of that island could calculate an eclipse from tables in their possession, and the priests of Java, in the days of Hinduism, had the same skill. All this knowledge was from India, and the superstitious opinions and ceremonies connected with the appearance of an eclipse, were borrowed from the same country, and embodied with the popular worship. In every improved language of the Archi-

pelago, an eclipse is called *Grahana*, and the dragon, which the Hindus suppose attempts to devour the luminary, *Rahu*, both of them pure Sanskrit words. The Malays sometimes call an eclipse "the devouring by the dragon, *makan Rahu*." There is to this day hardly a country of the Archipelago in which the ceremony of frightening the supposed monster from his attack on the luminary is not performed. This consists in shouting, in striking gongs, but, above all, in striking their stampers against the sides of the wooden mortars which are used by the villagers in husking their corn.

The Javanese are the only nation of the Archipelago that had a native calendar, as far as we can now ascertain. The Bugis, by far the most numerous, and, generally, the most powerful and civilized nation of Celebes, though they have now adopted the lunar reckoning of other Mahomedans, had once a solar year of 365 days, and specific names for each month. The year is said to have commenced with the 16th of May, and to have consisted of twelve months, which, with the length of each, were as follow :

Sarawana	30 days.	Mangalompae	31 days.
Padrowanae	30	Nayae	30
Sujewi	30	Palagunae	30
Pachekae	31	Besakae	30
Pasae	31	Jetae	30
Mangaserang	32		
Mangasutewe	30		365

When these terms are examined, we discover that six of them at least are the Sanskrit names of the Hindu months. They appear, however, which is a singular fact, not to be in order the names of the corresponding Hindu months, but to be very wantonly transposed. From this circumstance, from the year commencing with May instead of April, and from the positive numerical length of the months, we may suspect that the Bugis year is the relic of an indigenous calendar not very judiciously modified by the Hindus. Among the Bugis there is, at the same time, no vestige of any Hindu epocha as among the Javanese. It is not improbable that their mode of recording dates was by the length of their kings' reigns as in China. It is on this principle, probably, that we have to explain the care with which, even in *their* rude annals, the length of each sovereign's reign, before the introduction of Mahomedanism, is given. Thus we have "*Latang ri Suki* reigned twenty-seven years." "King *Botëe* reigned twenty-five years." "King *Bokonge* reigned thirty years," &c. &c. We find no such notices in the annals of any of the other tribes, even in those of the more civilized Javanese.

CHAPTER III.

NAVIGATION AND GEOGRAPHY.

Indian islanders, from their geographical situation, necessarily a maritime people.—Their maritime enterprises have never extended beyond those countries in the immediate neighbourhood of their own.—Their voyages usually coasting voyages.—Favoured by the steadiness of the monsoons, they occasionally assume a bolder character.—Derive some assistance from observing the heavenly bodies, and now and then have recourse to the compass.—The compass known to them by a native name.—Possibly acquired in their intercourse with the Chinese.—Division of the circumference of the horizon by the Malays.—Inferences regarding their history and origin to be drawn from the nature of the terms used.—Division of the circumference of the horizon by the Javanese less perfect.—By the minor tribes.—Indian islanders have no specific term to distinguish the monsoons.—*Ignorance of the Indian islanders on the subject of geography.—Hardly know any foreign country but by name.—Very imperfect knowledge of the countries they inhabit themselves.—They have no name by which to distinguish the whole group.—Generally ignorant of the insular form of the principal islands.—The word island used by them in a very circumscribed sense.—Principle on which names are given.—Hindus and Arabs proved, from the evidence of language, to have been ignorant of the true geography and topography of the Archipelago.*

In rendering an account of the state of navigation and geography among the Indian islanders, it will

be their ignorance rather than their knowledge that will constitute the principal matter of discussion.

From the nature of the countries they inhabit, the islanders are necessarily a maritime people. If such a state had been one favourable to the progress of society, we should have discovered among the Indian islanders a higher civilization than they are found to possess; but maritime skill is rather a symptom than a cause of improvement, and the peculiar advantages of their maritime situation, in the early periods of their progress, would be of little service to a rude people, ignorant of agriculture, and, therefore, destitute of the only means of insuring the ease and comfort necessary to the progress of civilization.

Favoured by the advantages of seas without tempests, so narrow that every voyage is nearly a coasting one; and by the certainty and steadiness of the periodical winds, the Indian islanders navigate in very slender barques the whole extent of the Archipelago, and among people so rude may be looked upon as the greatest of navigators. Yet their enterprise has never, if we except occasional voyages to Siam, the countries which lie between this last and China, and the well known voyages to the coasts of New Holland, extended beyond the limits of their own seas. The facilities afforded to their navigation in these disqualify them from

contending with the perils of a new element, and must be considered as hostile to the generation of hardihood and intrepidity even at home.

The navigation of the Indian islanders, as just observed, is nearly throughout a coasting one. The shores, headlands, and other land-marks, are their principal guides. During the most boisterous period of the monsoons, or for protection against occasional bad weather, their vessels, like the craft of the polished people of ancient Europe, can, from their small size, be hauled ashore or brought into creeks. Every little creek or inlet is with them a harbour.* The capacious havens, which afford shelter to our shipping, are not frequent in the Indian Archipelago, but their absence is no inconvenience in the present state of native navigation.

Trusting chiefly to the steady course of the monsoons, both in respect to force and direction, the most enterprising of the Indian navigators frequently pursue a bolder tract, and quitting sight of land, make by a direct course for their port of destination. The greater voyages of the commercial tribes of Celebes are conducted on this principle; and in sailing the broader portions of the seas of the Archipelago, European vessels often discover their little *praos* proceeding with confidence at a great distance from land. The practi-

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* *Pălabuhan*, "place of anchoring."

cal knowledge acquired by a long course of local experience is their principal guide, but they receive some assistance from an observation of the course of the heavenly bodies; and the compass is sometimes had recourse to. At what period this instrument was introduced among them, or whether they had any knowledge of the polarity of the magnet before their intercourse with Europeans, it is difficult to determine. The term by which the natives of the western portion of the Archipelago, at least, designate the mariner's compass is a native one. The word is *Pandoman*, which seems, by the usual rule of etymology, to be derived from the Javanese verb *dom*, to subdivide or partition, possibly in reference to the appearance of the card. While the Arabs and other western Asiatics designate the compass by an European name, it is rather remarkable that the islanders should employ a native one. The circumstance may, after all, be purely accidental; though it may be suggested, as a conjecture not altogether improbable, that the Chinese may have introduced to the knowledge of the Indian islanders some *toy* founded on the polarity of the magnet, the name of which would be applied to the mariner's compass when they acquired the use of it from the Arabs. The Indian islanders had unquestionably an earlier intercourse with that people than with the Arabs or Europeans, but language affords us no means of determining the ex-

tent of the obligations to which the Indian islanders are under to the Chinese in matters of improvement, for the oral languages of China are so dissonant, so disgusting, and so much unintelligible to the people of every other country, that these seem always to reject them. This may be the reason why the Indian islanders designate the mariner's compass by a native term.

It will be a matter of curiosity to examine the principle, and describe the mode in which the Indian islanders divide the circumference of the horizon; and those who feel that a careful examination of language affords the only rational means of ascertaining the early progress of society among a rude people, will pardon the length to which the disquisition will be pursued. The Malays divide the horizon into eight parts. The north is called *Utara*, and the south *Sălatan*. The east, *Timur*, and the west, *Barat*, are subdivided into three parts each. The north-east is called *Pading*, the true east *Jati*, and the south-east *Tănggara*. The north-west is called *Laut*, the true west *Tăpat*, and the south-west *Daya*. Eight additional points, making the whole sixteen, are occasionally formed for technical purposes, by placing the word *samata*, literally an eye, but here expressing a point of the compass, between the primary terms, as *Barat sa-mata Utara*, west-north-west.

An examination of the language in which these ideas are clothed, points at some curious results which it is not foreign to our subject to describe. Some of the terms have, indeed, apparently become obsolete, but the meaning of others is sufficiently plain. Among a maritime people like the Malays, the division of the horizon must necessarily have a reference to the winds, and the terms appear consequently to be borrowed from this obvious source. We can have no scruple in deciding that the terms now used had not their origin in *Menangkabao*, the parent country of the Malays, but with the colony established in the Malayan Peninsula. The first term, *Utara* or the *north*, is capriciously enough derived from the Sanskrit. The second term, *Sălatan* or the south, must, I think, be borrowed from *Sălat*, a strait or narrow sea; and here evidently refers to those straits which divide Sumatra from the Malayan Peninsula. The name, then, must have been bestowed by the people of the Peninsula, and, of course, means the wind from "the straits;" that is, from the south. According to the Malayan subdivision of the horizon, the points have principally a reference to the east and west. This determination has evidently a reference to the monsoons which blow from these quarters. Of these, the westerly monsoon, from its strength and danger, assumes with the navigator the highest rank in interest and importance.

The term which, in Malay, expresses the west is *Barat.* In Javanese, the same word means wind in general; for which, in Malay, there is no specific expression. Is *Barat* a word of the great Polynesian language, and from being a generic term, did the Malays for distinction apply it specifically to the west? The word *tăpat* is added to it, to distinguish it from the *north-west* and *south-west*, to which, as already stated, the common term *Barat* is also applied. The former is denominated *Barat-laut*, or the west wind from the ocean. This also points plainly enough to the country of the people who gave the name. The north-west wind blows upon the extremity of the Peninsula from the open sea or great gulf of Bengal. The south-west is expressed by adding to the common term the word *daya*. The adjunct means in Malay deceit or trick, and refers to the inconstancy and danger of the winds blowing from this quarter. The term may be almost literally rendered "the deceitful west;" and it is unnecessary to remark, that it applies, not to a people living in Sumatra, but in the Peninsula. *

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* "The south-west monsoon, which prevails outside of Achin-head, from April to October, seldom blows far into the strait, particularly near the Sumatra side, for the force of the monsoon being repelled by the mountains and high land, stretching from Achin along the coast of Pedir, it is succeeded by light variable winds and calms, with sometimes land

The word *Timur* expresses, in Malay, the easterly quarter of the horizon, and I think has no other meaning. I imagine it to be a word of the ancient Polynesian language, and that its primitive signification is preserved in Javanese, where it means *young*, and figuratively mild or gentle, justly enough applied to the easterly monsoon, in contradistinction to the strength and maturity of the westerly winds. The adjuncts *Pading* and *Tănggara*, the etymologies of which I cannot discover, express respectively the north-east and south-east. There is a singular meteorological form of expression often used by the Malays which requires to be observed upon. They use the correlative expression *Atăs angin*, or above the wind, and *Bawah augin*, or beneath the wind; the last to express their own country, and the first all foreign countries to the west of their own. I conclude, that the reference here is to the westerly monsoon, distinguished by its impetuosity, and, therefore, its importance to the navigator; and

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breezes or hard squalls from the Sumatra coast at night, which require great caution. Sumatras or squalls from south-westward are frequent in the south-west monsoon. The *Sumatras* generally come off during the first part of the night, and are sometimes sudden and severe, and accompanied with loud thunder, lightning, and rain."—*Horsburgh's Directory*, Part II.

that the language was first applied between the parent country of *Menangkabao*, and the colony established in the Peninsula; the first, lying to the west, being of course the windward country, and the last of course the leeward. When, in process of time, the intercourse between them was interrupted,—when the colony became of more importance than the parent state, and maintained a busy intercourse with foreigners from the west; it is not difficult to imagine, that the people of the Peninsula, with whom alone *we* are acquainted, should have transferred it to these foreigners. The expressions now alluded to are wholly confined to the Malay language, and nothing similar to them is to be discovered in the dialects of the other tribes. In that language the east and the west are occasionally expressed by the terms "rising of the sun" and "setting of the sun," expressions parallel to "the orient" and "the occident," in the idiom of European languages.

Among the Javanese, an agricultural people, the circumference of the horizon is divided with less refinement and less minuteness than with the Malays, a people of mariners. The Javanese use the words *Wetan*, *Kulon*, *Lor*, and *Kidul*, to describe the cardinal points of the compass; and by combining these in the same precise manner we do ourselves, for the four principal intermediate points, make the whole eight. The only term here

used, which can be traced to its origin, is *Wetan* the east, which means root or source. The other terms, in the original significations, had undoubtedly a relation to this one. The loss of these words, in their literal meanings, is one among many proofs of the great changes which time has produced on these languages.

The terms of the Sanskrit language for the winds are not unknown to the Javanese, and they employ the words *Purwo*, *Păchăm*, *Daksina*, and *Taksina*, to express the principal quarters of the horizon, but more frequently in the sense of *beginning*, *end*, *right*, and *left*.

My want of acquaintance with the minor languages disqualifies me from entering into the same discussion respecting them. Some hypothetical notion respecting the source of the winds we may, however, conclude from the little we do know, seems to have been the basis on which the language which describes the divisions of the horizon was formed. In the Balinese language, for example, we find the east expressed by the term *Kangin*, which seems to mean root or origin of the wind. In the Sunda, again, the south is assumed as the root, and recognised by a term of the same import, *Părnangin*.

The Indian islanders have no term to designate the monsoons, a matter easily enough accounted for. The monsoons are no unusual phenomenon in

their country, but the common order of nature, and could not excite the peculiar curiosity of a people not living in *the latitudes of variable winds.* The year is divided into a dry and a wet half, and these are expressed by the native term *Masa* or *Mangsa*, meaning season, or by the Arabic one of the same signification *Musim*, which is the word corrupted *monsoon* by Europeans.

After this account of the knowledge which the Indian islanders have of navigation, I shall proceed to draw a similar sketch of their ideas on the subject of geography.

Of geography, as a science, they share the common ignorance of all Asiatics. The figure of the earth, and the relation of its parts to each other, are wholly unknown to them. They have never passed the limits of their own countries for information, and have little better than a sort of hear-say knowledge of the countries of the strangers who, from time immemorial, have frequented their ports. The coast of Coromandel, Siam, Ava, * China, Japan, Arabia, Turkey, and a few of the commercial states of Europe, may be looked upon

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* It is, we may remark, the Malayan, and not the native names of Ava and Siam which Europeans have borrowed. This points out the channel of our first acquaintance with those countries. Our traders first heard of them through the Malays and their language.

as the only countries of the world of which even the names have reached them.

Of the very countries they inhabit themselves the Indian islanders have but a very imperfect knowledge. Their navigators, as mere pilots, are in possession of much useful practical knowledge, but nothing can be more foreign to the character of the people than to take a curious or scientific view of the countries they dwell in. The practice of classification and generalizing is so familiar to civilized man, that he finds it difficult to account, at first view, for the supineness or stupidity of barbarians on subjects of this nature. Among the Indian islanders, the absence of such views in matters of geography affords a curious and interesting subject of observation that deserves to be inquired into at some length, as well because it throws much light upon the character of the people, as upon the actual circumstances, physical and geographical, of the countries they inhabit.

We may begin by observing, that, although the islands designated the Indian Archipelago agree remarkably among themselves, and differ as remarkably from all other countries,—although the limits of the group, geographical as well as moral, are strikingly well defined, the most civilized of the races of men who inhabit them have no common name by which to distinguish them. This, however obvious to us, would be an

effort of abstraction far beyond the usual range of their comprehension. From the same cause arises their ignorance of the insularity of the principal islands. They are either wholly unacquainted with this fact, or they neglect it as matter, in their circumstances, more curious than useful. Nothing can be more natural than such ideas on their parts.* The usual words for island, *Pulo* and *Nusa*, ought strictly to be rendered into our language "islet." The comprehensive word which we apply alike to every tract of land surrounded by water from Thanet to New Holland, does not belong to their language or ideas. The words *pulo* and *nusa* the Indian islanders hardly apply to any portion of land, the insularity of which is not within the range of vision. For such tracts they never fail to have specific names, usually bor-

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* "The ideas of geography among such of them as do not frequent the sea are perfectly confined, or rather, they entertain none. Few of them know that the country they inhabit is an island, or have any general name for it. Habit renders them expert in travelling through the woods, where they perform journeys of weeks and months without seeing a dwelling. In places little frequented, where they have occasion to strike out new paths, (for roads they have none,) they make marks on trees, for the future guidance of themselves and others. I have heard a man say, 'I will attempt a passage by such a route, for my father, when living, told me that he had left his tokens there.'"—*Marsden's Sumatra*, p. 193.

rowed from the physical aspect of the country, commonly from its configuration. I shall give a few examples. The island which, in very bad taste, we have called *Prince of Wales Island*, is called by the Malays *Pinang*, or the Areca nut, from some imaginary resemblance of the shape of the island to that fruit, and certainly not, as some have imagined, from the Areca being a prominent article of the growth of the island, for the island was uninhabited when the name was bestowed, nor was even the tree found there in its wild state. There are several desert islands in various parts of the Archipelago, called *Ubi*, or *Uwi*, which means a yam, though they do not produce one; the allusion is to their form. A whimsical example of the principle on which names are bestowed is afforded in those of three or four little islands towards the northern entrance of the harbour formed by Pinang and the Queda shore. The first is considered to bear some resemblance in shape to the abdomen of a pregnant woman, and is therefore called *Pulo Bunting*, or the pregnant island; the second is called *Pangil*, which means to call; the third, *Sungsung*, which signifies to escort, or accompany; and the fourth, *Bidan*, signifying a midwife. The whole hieroglyphical sentence, of course, imports, "There is a woman in labour, send a messenger with an escort to call the midwife!" The idea of insularity is constantly present to the minds of the

natives when they mention such inconsiderable spots, and the word implying isle or islet is inseparably prefixed; but this is, indeed, no more than is done in our own language, in similar cases.

In estimating the importance of a country, it is population and actual culture only that are considered; extensive wastes and forests enter no more into the calculation than sky or water. When an island, even an inconsiderable one in point of extent, is inhabited by a tribe considerable from civilization or numbers, the idea of insularity is dropped, and the country takes its name from such tribe. Such an island is then called "the land" of such and such a people, and not the island. The small islands of Bali, Amboyna, Ternati, and Suluk, are, on this principle, called, not the islands of the Amboynese, the Ternatians, and the Suluks, but the lands of these people, as *Tanah Ambun, Tanah Bali*, &c.

When two or more civilized tribes inhabit one island, the most considerable gives name to the whole, when the whole, which does not often happen among themselves, is spoken of collectively. In this manner Java is called the land of the Javanese, Celebes the land of the Bugis, and *The Peninsula*, without any distinction which has reference to the peculiarity of its geographical form, "the land of the Malays." An European, on his first arrival at Batavia, is a little surprised to hear

the natives, and the Dutch colonists following their example, speak of going to or coming from Java, meaning by these expressions, going to or coming from the central and eastern provinces of the island, those portions occupied by the *Javanese* race, strictly so called.

The two greatest islands of the group, Borneo and Sumatra, are not occupied by any one race distinguished beyond the rest for numbers or civilization, and hence we never hear them called after any one tribe in particular. The natives of Sumatra, especially, are spoken of as if they inhabited separate and even distinct countries, which is, indeed, virtually true, for the only intercourse between those who are not actual neighbours is by water. It is possible too that the very great extent of these islands may contribute to remove from the minds of the natives, to a farther distance than usual, the notion of continuousness and common connection.

In a few instances, and in the absence of a pre-eminent tribe or nation, the name of a place will be occasionally applied as the common term for a whole island. When the Javanese, properly so called, speak of Sumatra, they call it the land of *Palembang*, that being the portion of the island with which they are best acquainted. In the same manner they call Borneo *Banjarmasin*. It is on a similar principle that Borneo, the name of a

Malay state in the north-west part of that immense island, has been generally applied to the whole.

From what has now been said, it is not to be supposed that the natives are wholly ignorant of the insular form of the great islands. Their constant voyages must, as matter of curiosity, have rendered them acquainted with this fact, and their language evinces such knowledge. In the legendary tales of the Javanese, we occasionally hear Java called *Nusa Jawa*, the island of the Javanese; Bali, *Nusa Kambangan*, or "the Floating Island;" and *Lombok*, Sasak, or "the Raft." Such terms are, however, only *curiously* applied by the natives, and do not belong to the language of ordinary life,—the language which is natural to the usual current of their habits and ideas.

Such are the principles on which the Indian islanders bestow names on the countries they inhabit. There are some apparent but no real exceptions. *Bali* is idly enough supposed, and by some of the literary natives themselves, to be derived from the word which means *to return*, in reference to its being supposed that the natives, after once adopting Mahomedanism, relapsed into idolatry. The true orthography of the two words, which is different, destroys this conceit. It is true that, in the polite dialect of Java, the synonyms for them are the same, (*wangsul*,) but the mere resemblance of sound seems often to

have satisfied the inventors of that dialect, without any reference to sense, of which we have many examples; and, among others, a striking one in the formation of the polite synonym for Malay, which is made to agree, without any obvious reference in meaning, with the verb "to run." Another apparent objection is in the name of the principal island of the Philippine group, which European writers assure us confidently is derived from the resemblance of the island in shape to the mortar in which rice is ground. It is by no means probable that the natives of the Philippines, more barbarous still than their neighbours, should be aware of the shape of the island they inhabited; but, independent of this, the orthography of the words is widely different. The one is *Lăsung*, the other *Lusong*. The term, I have no doubt, is Chinese; for the Chinese, who destroy the sound of all other native names of countries, or use barbarisms of their own, apply the word *Lusong* familiarly and correctly.

The Hindus and Arabs who visited the Archipelago, I think it may be satisfactorily proved, were as ignorant of the geography and topography of the Archipelago as the natives themselves; and we do not discover from the evidence of language, the only evidence that exists, that their views were in any respect more comprehensive. They knew the particular countries which produced the finer

spices,—which yielded pepper, incense, gold, tin, and ivory,—where food was most abundant,—and where it was most profitable to plant their religion; but this was the extent of their learning. The Hindus were sufficiently liberal in bestowing Sanskrit names on mountains, towns, districts, and minor places,* but they looked no further. There is no Hindu name for the whole Archipelago, for its seas or straits, or for a single island out of the whole group. The little island of *Madura* is the only seeming exception, but it actually is not one. The name belongs only to a district, and strangers alone apply it to the whole island. In the language of romance, the same island is occasionally called by another Sanskrit name, *Nusa Antara*, or "the island lying betwixt," that is, betwixt Java and the country of the Hindus. This name was, of course, imposed on that portion of Java which is immediately south of *Madura*, a principal seat of Hinduism, and might be quoted as a signal example of the narrow views and geographical ignorance of those who bestowed it,—that is, of

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* These names are always mythological, and not real names, borrowed from the country of the colonists. Unless Hindus acted very differently from all other conquerors, Hinduism, we may infer from this fact, was planted by persuasion, and not by the sword.

the Hindu sojourners and colonists of the Indian islands.

Of the geography of the Archipelago the Arabs were at least as ignorant as the Hindus. They have not imposed a single name of their language, either upon island, province, town, or mountain, that is popular and current; and, if we except the name *Al Rami* or *Lameri*, which their *men of learning* have arbitrarily given to Sumatra, perhaps none at all. When the Arabs speak collectively of the Archipelago or its inhabitants, they give to both the name of *Jawi*, a corruption of *Jawa*, Java, thus following, with respect to the whole, the same course which the natives themselves pursue with regard to each particular island; that is, giving to it the name of the principal tribe or nation.

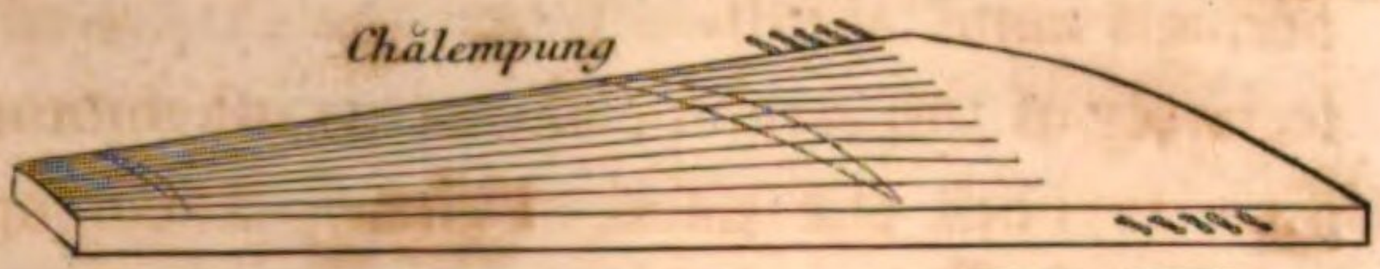
Gămbang or Staccado

Kecher or Cymbal

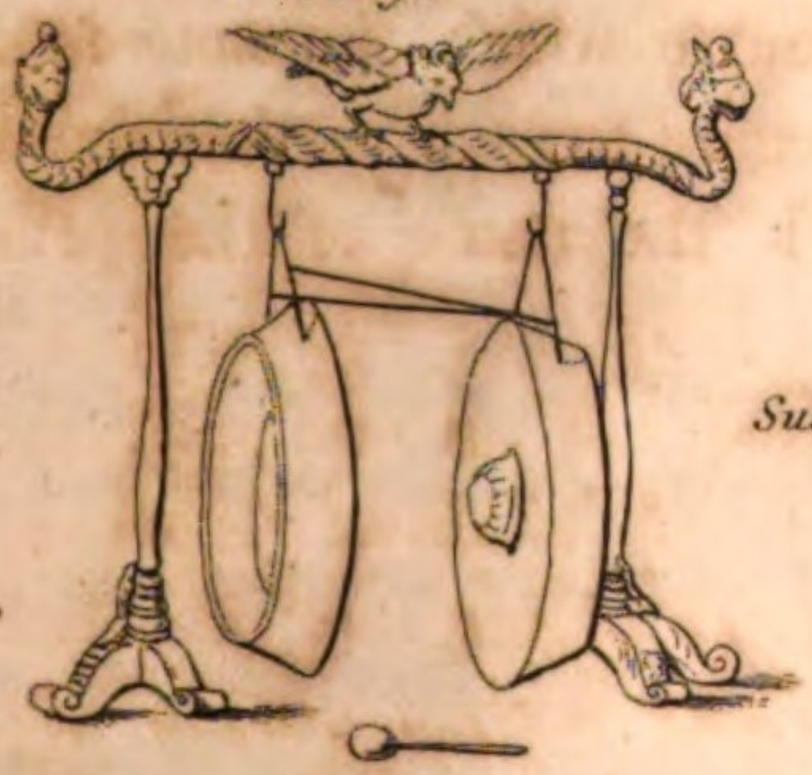
Bonang or Kromo

Ketuk

Chălempung

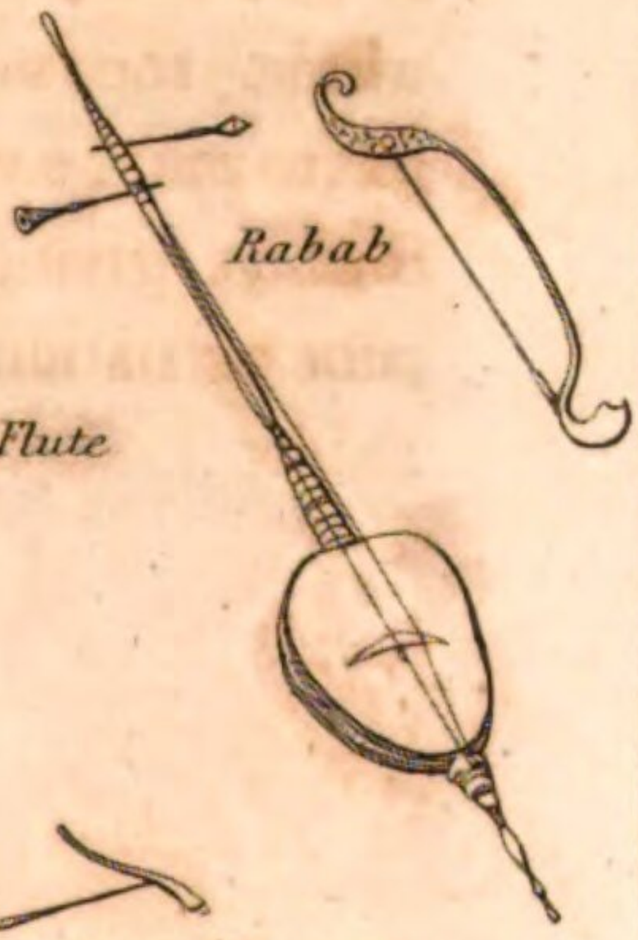


Gongs



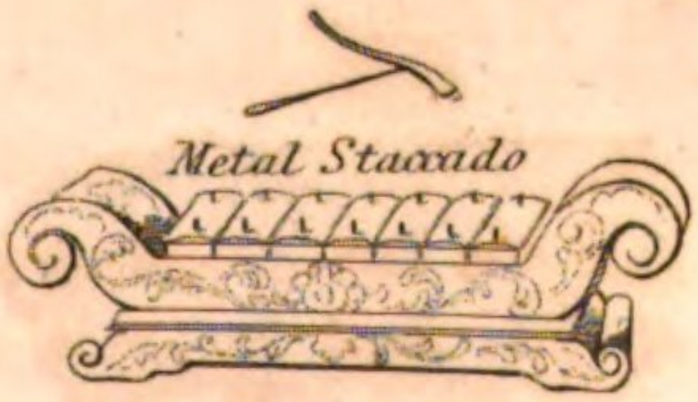
Suling or Flute

Rabab

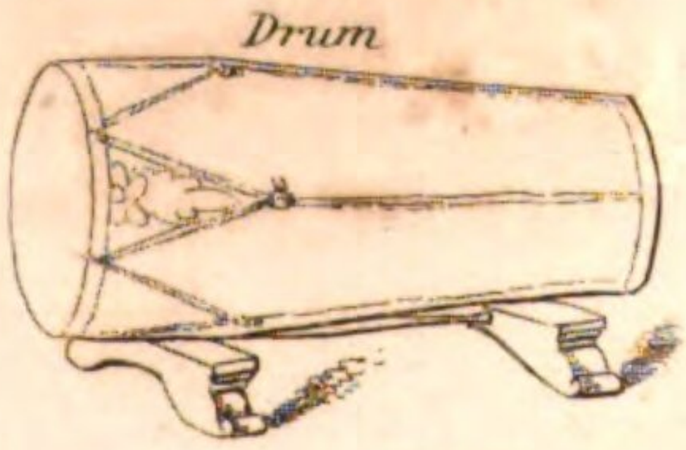


Gănder

Metal Staccado



Drum



Engraved by W.H Lizars

JAVANESE MUSICAL INSTRUMENTS.

Edinburgh Published by A. Constable & Co. 1820.

CHAPTER IV.

MEDICINE—MUSIC.

Indian islanders ignorant of sculpture and painting.—State of the medical art, and character of its practitioners.—Nature of their prescriptions.—Advantages of the simple and natural practice pursued in febrile disorders.—Total ignorance of the treatment of surgical disorders.—State of music.—Description of musical instruments.—Bands or gamălans.—Character of Javanese music.

Of sculpture and painting the Indian islanders are at present absolutely ignorant. If the genius of natives designed and executed the beautiful temples, the ruins of which we still admire, we can have no hesitation, however, in pronouncing, that, did there exist a demand for talent in sculpture, abundance of it would be produced. Of their capacity to excel in painting we have no opportunity of judging, for it is an art, which, in no age, in common with other Asiatic people, they appear to have practised.

Medicine and *music*, the one by necessity, the other for amusement, have made more progress, or been more practised. Of the first they are, indeed, like other barbarians, extremely ignorant as

a science, but, in the last they have made a progress unusual in their state of society. Of these two arts, therefore, some account will be interesting. Beginning with *medicine*, I shall premise that the practitioners are the veriest of empirics. They are generally old men or old women wholly uneducated. I once questioned an old Javanese doctor respecting his education, and he replied, with perfect *naiveté*, that "he had never been instructed in his calling, but that God, as occasion required, suggested his prescriptions to him from time to time." As with other Asiatic people, some smattering of physic is considered an accomplishment by persons making pretext to learning, and a few of the Malays, accordingly, are now and then found possessed of some of the medical jargon of the Arabs; but the practice of the art is not in the hands of such persons, and perhaps it is as well for patients that it is not.

Though possessed of many vegetable productions of great potency, the Indian islanders have no distinct conception of their virtues or application. A gentleman well calculated to give an opinion on this subject, does not scruple to pronounce, that "from the practice of the natives little is to be learned; they employ the substances empirically, without any regard to quantity; their ignorance in the science of medicine renders them incapable of shewing the action of any substance on the hu-

man system." "I have been directed by them," continues he, "to many subjects, but in none of them have I received any decisive and satisfactory account of their operation."* The practice, in general, may be said to be confined to the exhibition of a few simples internally, and to the administration of external applications, with chafing and frictions. Spells and incantations, as ineffectual and as harmless as those, accompany this practice. Topical blood-letting is occasionally had recourse to, but general blood-letting hardly ever. They never feel the pulse, and are entirely ignorant of the structure of the human body. If such practice be productive of little benefit, it must be admitted, that it has the negative advantage of doing little harm, and this is no small matter. A practitioner, more rash than the rest, will unfortunately, however, now and then be found whose practice is bold enough to be mischievous. One fatal case of this nature fell under my own observation. In the year 1814, when administering the civil duties of the province of Samarang, in Java, complaint was made of a certain female doctor for destroying one of her patients. The practitioner admitted that the patient had sunk under the operation of her prescription, but con-

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* Dr Horsfield on the Medical Plants of Java.—*Trans. of the Bat. Society*, Vol. VIII.

tended that, on all former occasions, it had been successful. The disease was insanity, and the fatal prescription consisted in holding the patient's head over a pot of ignited sulphur to bring him to his senses. He struggled of course violently, but six stout villagers employed to hold him over the poisonous fumes rendered his struggles ineffectual, and when the dose was administered to the satisfaction of the physician, animation was gone past restoration.

The simplicity of the practice usually pursued must be of incalculable benefit to the patient. This simplicity excludes the administration of remedies prescribed upon such erroneous and mischievous hypotheses, as never fail to be formed by barbarians when they begin to speculate on the theory of diseases. It is to the absence of such opinions that I think we ought, in some measure at least, to ascribe the natural and judicious practice followed by the people of these countries in all febrile disorders. Familiarized in their warm climate, and in a country abounding in rivers or brooks, to frequent bathings and ablutions, the Indian islanders naturally pursue in sickness what has conduced to their comfort in health. The cold affusion in fever, a bold innovation among us, has been practised from time immemorial by the Indian islanders. It is the Malays who carry the use of the cold-bath in febrile complaints to the

greatest length. They use it not only in remittent and intermittent fevers, but also in small-pox. In the latter complaint the patient, exposed naked to a stream of fresh air, is constantly sprinkled with cold water from a brush, and even bathed in a stream of running water. In 1810, six Malays, the eldest of whom was fifty, and the youngest at least five and twenty, were under confinement at *Penang* on charges of piracy. The whole of them were seized with small-pox, affording a striking presumption of the unfrequent returns of the epidemic in their country, which was the territory of Queda where it borders on Siam. While ill in the hospital, and covered with the eruption, they were discovered bathing in the brook which passed by; lying down, in short, naked in the running stream. They were permitted to persevere in this practice, and they all recovered.

In surgical disorders, where the advantages of science and skill are less equivocal, the ignorance of the Indian islanders is attended with all the bad consequences that might be expected. From the strength of their constitutions, and the moderation of their lives, they have indeed frequent recoveries from injuries under which Europeans in any climate would sink, and particularly in these warm and damp regions where wounds are so apt to terminate in the fatal symptom of lock-jaw.

The most fatal effects of ignorance in the healing art are exemplified in venereal complaints. The natives are unacquainted with the use of mercury in the cure of this malady; and although in their excellent constitutions, and under the advantages of a vegetable diet, many cures are probably effected without it, still many fall victims, and even a stranger cannot pass some of the highways without observing many objects in the last and most loathsome stages of this disorder.

The treatment of women in child-birth is judicious, or at least discreet, for nothing is done to impede the operations of nature. The facility of the process of parturition in a warm climate, is the most obvious and greatest advantage possessed by its inhabitants over the natives of temperate regions. The pains of labour are of such short continuance, and, consequently, produce so little exhaustion, while the tendency to inflammation in the constitution is so small, that women, in many parts of the east, are frequently seen going about their usual domestic occupations in a few days, nay, sometimes in a few hours, after child-birth.

After this account of the state of the *medical art* among the Indian islanders, I shall proceed to describe their *Music*. Each tribe has its distinct national airs, but it is among the Javanese alone that music assumes the semblance of an art. These people have, indeed, carried it to a state of

improvement, not only beyond their own progress in other arts, but much beyond, I think, that of all other people in so rude a state of society. This is most remarkably displayed in the construction and composition of their musical instruments and bands. These instruments are either *wind* instruments, *stringed* instruments, or instruments of *percussion*. The two first are remarkably rude, and it is only in the last that the perfection of Javanese music is to be discovered. I shall offer the reader a short description of all these in succession, and afterwards proceed to give a description of their musical system. In doing this, I am happy to say, that my own deficiencies are supplied by the skill and learning of Dr Crotch, the well known author of the "Specimens of the various Styles of Music." I supplied this gentleman with a variety of Javanese airs, taken down by my friend Mr Scott of Java, and he had the advantage of inspecting the fine collection of musical instruments belonging to Sir Stamford Raffles at the Duke of Somerset's. On the subject of Javanese music he addressed a letter to me, the words of which I shall quote without alteration on every material point.

Of the wind instruments the rudest and earliest is the *Angklung*. This instrument is confined to the mountaineers of Java, particularly those of the western end of the island. It consists of a

number of tubes of bamboo cane, cut at the end like the barrels of an organ, and of graduated lengths so as to form a gamut or series of notes. The tubes are loosely placed in frames, so as to move when the frame is shaken; and the whole of its rude notes consists in nothing more than the vibration produced by this motion. A troop of forty or fifty mountaineers will be seen dancing in wild and grotesque attitudes, each individual playing upon an *Angklung*, himself and his instrument decked with feathers.

Among the musical instruments of the neighbouring island of Bali is a large wind instrument, in appearance like a German flute, but in sound and the manner in which it is blown more resembling a clarionet. It is about four feet in length, and five or six of them usually play in a band. The *suling* and *serdum* are sorts of flutes or fifes in use among the Malay tribes, played alone, and never in a band. These, I think, are the only native wind instruments known to the Indian islanders at present. The fife or flute they acquired from the Hindus, as its Sanskrit name *bangsi* points out. Trumpets they acquired from the Persians and Europeans, as we learn from their names, *nafiri* and *salompret*. The *sruni* is a kind of native hautbois or trumpet, which we read of in native romance, without ever seeing.

Of stringed instruments they have three, the

chălempung, the *trawangsa*, and the *rabab*. The *chălempung* has from ten to fifteen wire strings, and is played in the manner of a harp. The *trawangsa* is an instrument resembling a guitar, which is occasionally found among the Sundas or mountaineers of Java. This is the same sort of lute which we hear of among the Malays under the name of *kăchapi*. The *rabab*, an instrument borrowed from the Persians, is a small violin of two strings played with a bow, and producing perfect intonation. This is played by the leader of the band in a Javanese orchestra, but is wanting in the music of those tribes who have had little intercourse with the western nations of Asia. It is a handsome little instrument, made of ivory, with a front of parchment.

The instruments of percussion are numerous. The drum is a native instrument, and recognised by many different names, according to the dialects of the people. Besides the native varieties, they are indebted to the Arabs and Europeans for others. The native drum struck with the hand is a rude instrument; and Dr Crotch pronounces, upon a very good one in the collection of Sir Stamford Raffles, that "the sound is feeble and unmusical."

Next to the drum may be mentioned the well known instruments called *Gongs*. The word, which is correctly written *gung*, is common to all

the dialects of the Archipelago, and its source may be considered to be the vernacular language of Java; if, indeed, it was not originally borrowed from the Chinese. The gong is a composition of copper, zinc, and tin, in proportions which have not been determined. Some of them are of enormous size, being occasionally from three to four feet in diameter. They have a nob in the centre, which is struck with a mallet covered at top with cloth or elastic gum. They are usually suspended from a rich frame, and the tone which they produce is the deepest and richest that can be imagined. Dr Crotch says of those he inspected, "A pair of gongs was suspended from the centre of a most superb wooden stand richly carved, painted, and gilt. The tone of these instruments exceeded in depth and quality any thing I had ever heard."

The next instrument of percussion to be mentioned may be described as a variety of small gongs, of which one is laid in a wooden frame upon strings to support it. These, according to their varieties, are called by the names of *Ketuk* and *Kampul*.

A series of similar vessels or gongs, arranged in a double row upon a wooden frame, go under the name of *Kromo* and *Bonang*. "The tone of this singular instrument," says Dr Crotch, "is at once powerful and sweet, and its intonation clear and perfect."

The last class of instruments of percussion are the *staccados*, in the Javanese language called *Găm̆bang*. These are of greater variety than any of the rest. The first I shall mention is the wooden staccado, or *Găm̆bang Kayu*. This consists of a certain number of bars of a hard sonorous wood of graduated lengths, placed over a wooden trough or boat, and struck with a little hammer. This instrument is common throughout every part of the Archipelago, particularly among the Malay tribes, and is often played alone.

The second kind of staccado resembles this, differing from it only in having the bars made of metal instead of wood. They each assume different names in the copious language of Java, according to the number of bars, or notes, or other modifications of their construction. The tone of the wooden staccado is sweet, but not powerful; that of the metallic one stronger. A modification of the latter is known by the name of *Găn̆der*. This consists of thin plates, instead of bars of metal, supported by tightened cords, instead of resting on the sides of the wooden boat or trough; below each bar there is a bamboo tube to improve the sound. On the fabrication of all those instruments Dr Crotch observes, after viewing those at the Duke of Somerset's, that he "was astonished and delighted with their ingenious fabrication, splendour, beauty, and accurate intonation."

The instruments now described, according to their arrangement, the omission of some instruments, or the insertion of others, are divided into bands or orchestras, pitched on the same scale in perfect unison, and each appropriated to some particular description of music, or some particular occasion. The word *Gamălan*, which we so often hear in the mouths of the Javanese, expresses these bands or sets. There are no less than seven of them. The first is called *Manggang*, and is the simplest and most ancient. Some of the principal instruments mentioned in the description I have given are omitted in it; it is played at public processions. The name of *Gamălan Kodok Ngorek*, or the band resembling "the croaking of frogs," a name which it sometimes bears, was probably given to it from its want of harmony, after the Javanese became acquainted with the more improved and perfect ones.

The next band is the *Sălendro*, the most perfect of all, whether for the number of instruments of which it consists, or the number of notes in each of these. The *Pelag* is like the *Sălendro;* but some of the instruments have fewer notes, and all are larger and louder. The *Miring*, as its name implies, partakes of the nature of the *Sălendro* and *Pelag*. These three bands are more particularly employed as accompaniments in the different kinds of dramatic exhibitions.

The *Gamălan Choro Bali*, or band according to the fashion of Bali, omits the *Răbab* or violin, an instrument borrowed from the Mahomedans, for which, I presume, are substituted in the native country of it, the flutes or clarionets which I have described. In other respects it resembles the *Sălendro*, and has the instruments as large and loud as those of the *Pelag*.

The *Săkaten* is only distinguished from the *Pelag* by the still greater size and louder sound of the instruments. This is played only before the monarch, and on very solemn occasions, such as the great religious festivals.

The *Srunen* is the martial music of the country. In this band, as its name implies, trumpets are introduced, or some wind instruments similar to them.—A complete band of either kind will cost from two hundred to five hundred pounds Sterling.

On the style and character of Javanese music, the following are Dr Crotch's very interesting observations: "The instruments," he observes, "are all in the same kind of scale as that produced by the black keys of the piano-forte; in which scale so many of the Scots and Irish, all the Chinese, and some of the East Indian and North American airs of the greatest antiquity were composed. The result of my examination is a pretty strong conviction that all the real native music of Java, notwithstanding some difficulties which it is

unnecessary to particularize, * is composed in a common enharmonic scale. The tunes which I have selected are all in simple common time. Some of the cadences remind us of Scots music for the bagpipe; others in the minor key, have the flat seventh instead of the leading note or sharp seventh,—one of the indications of antiquity. In many of the airs the recurrence of the same passages is artful and ingenious. The irregularity of the rhythm or measure, and the reiteration of the same sound, are characteristic of oriental music. The melodies are in general wild, plaintive, and interesting." It is almost unnecessary to add, that the Indian islanders are unacquainted with the art of writing music; the tunes, of which there are a great variety, are handed down from memory.

In the plates accompanying this work will be found the scales or gamuts of the principal instruments of percussion, with five Javanese tunes, and one Malay air, selected by Dr Crotch, to which are added, by himself, the basses and chords.

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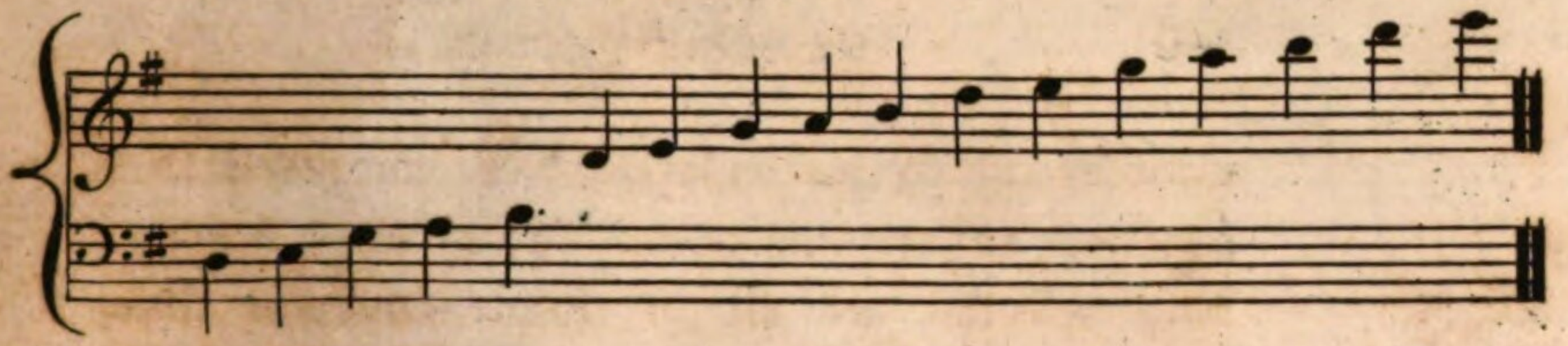
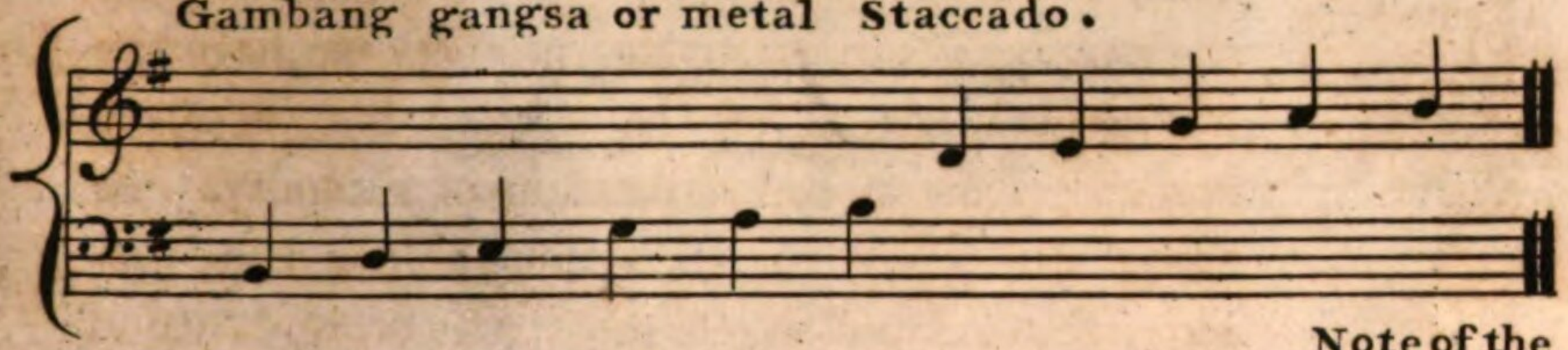
* The difficulties here alluded to are, in our present state of information, believed to be the consequence of some errors which had found their way into the original manuscript furnished to Dr Crotch.

Scale of the Gambang Kayu or wooden Staccado.



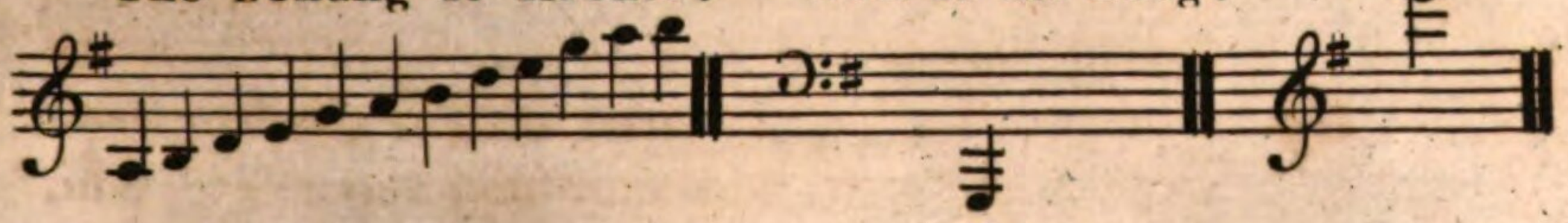
Gambang gangsa or metal Staccado.



The Bonang or Kromo.

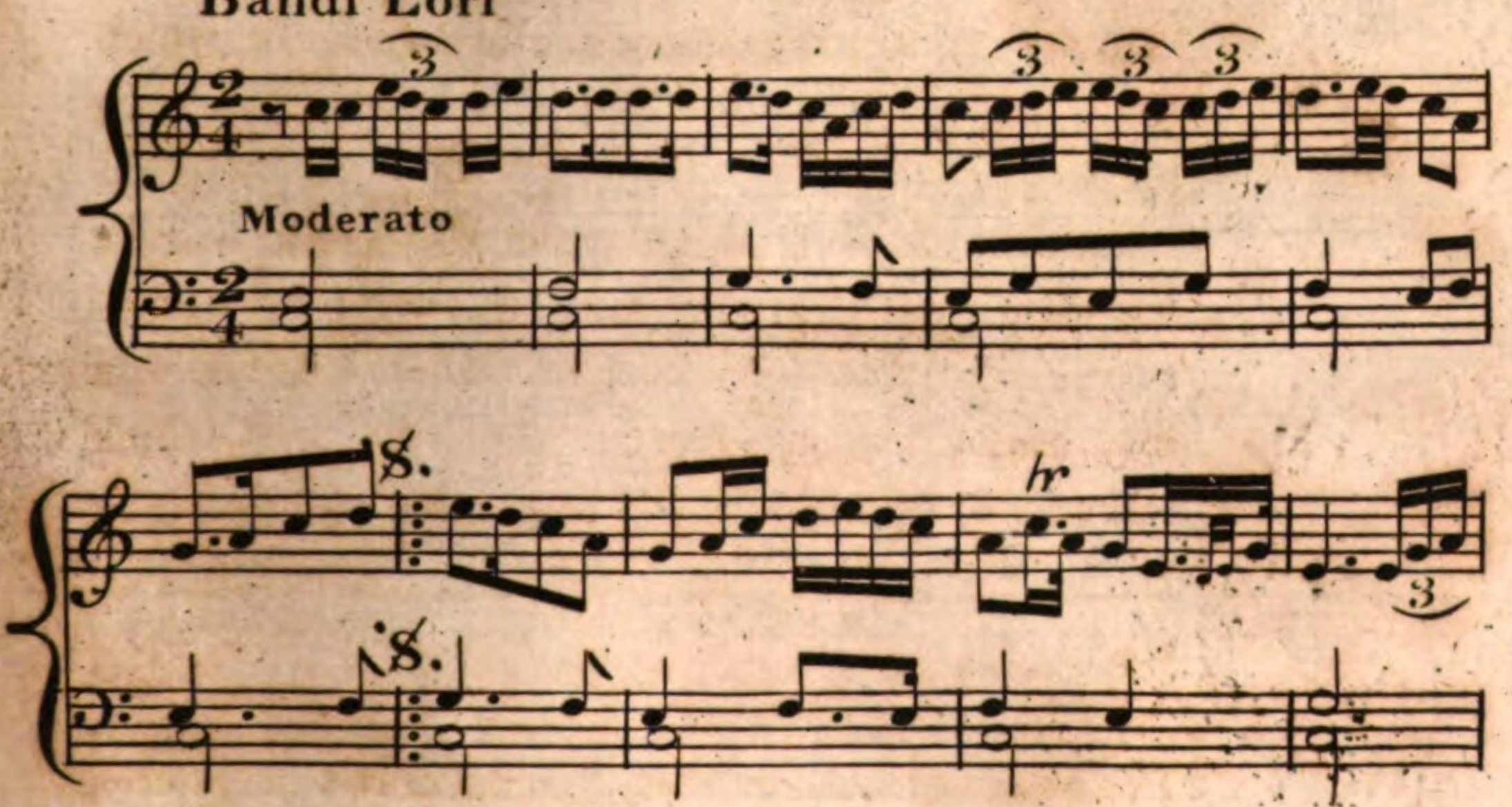
Note of the Gong.

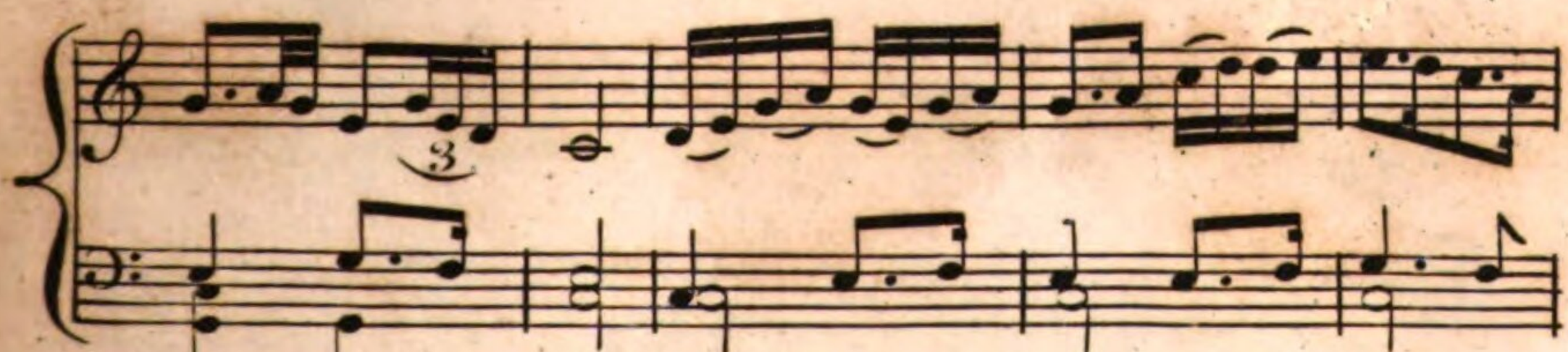
Note of the Cymbal



Bandi Lori

Moderato





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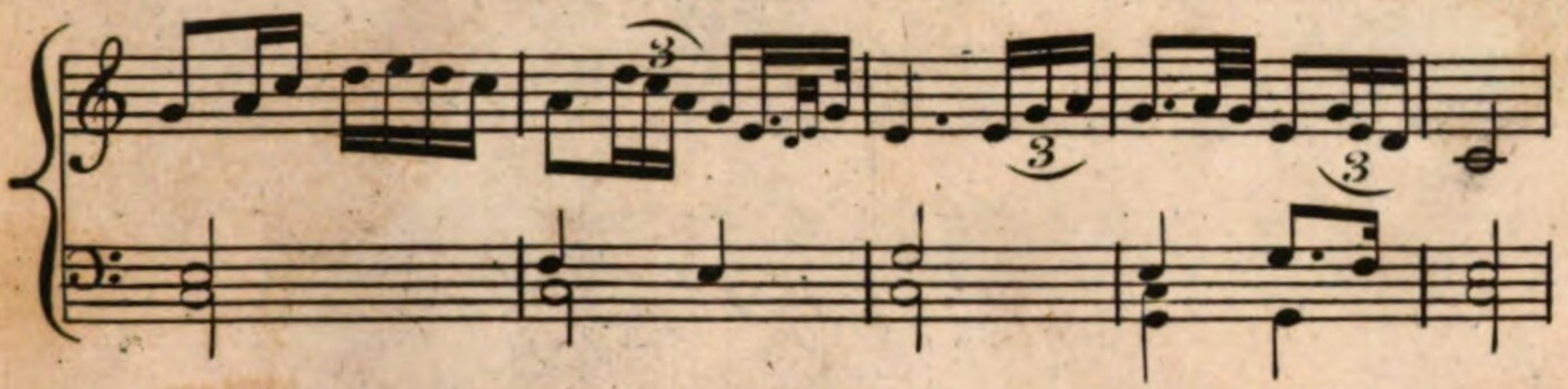

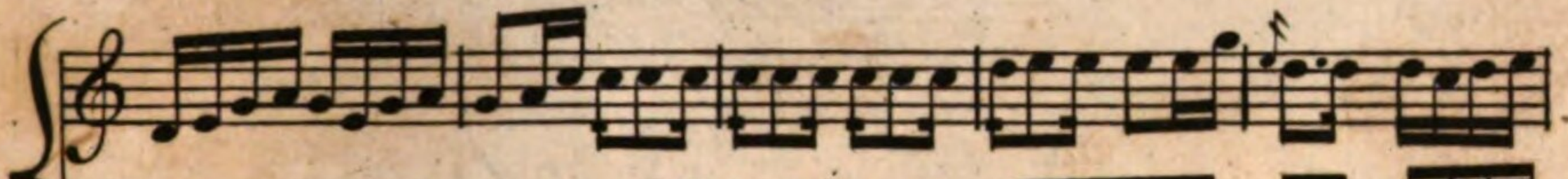

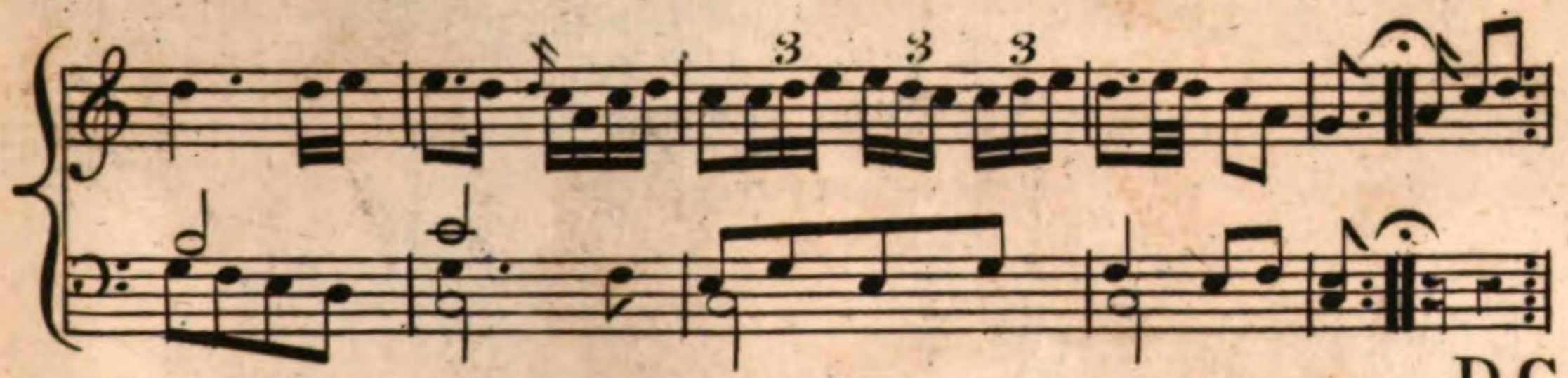

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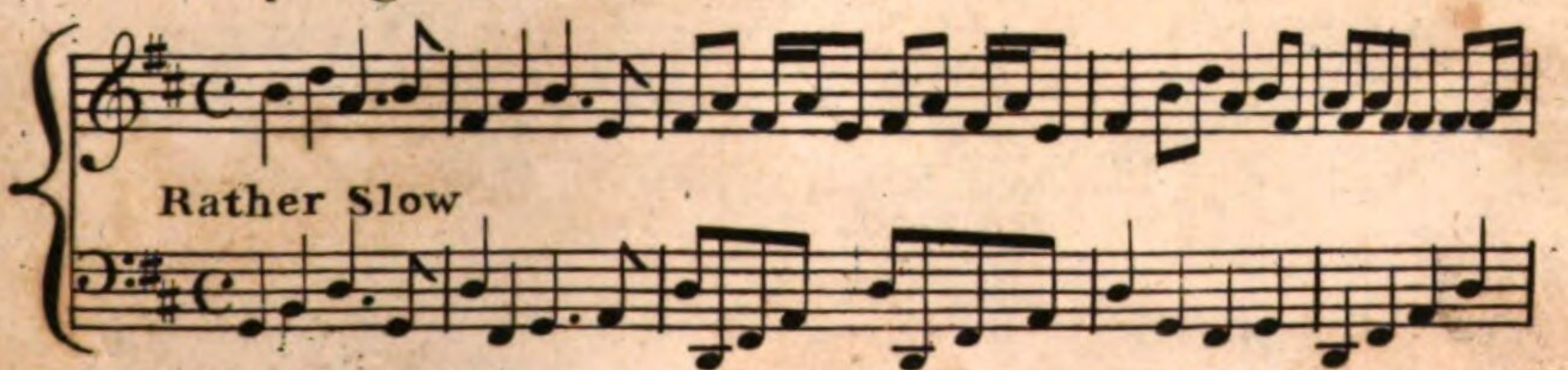

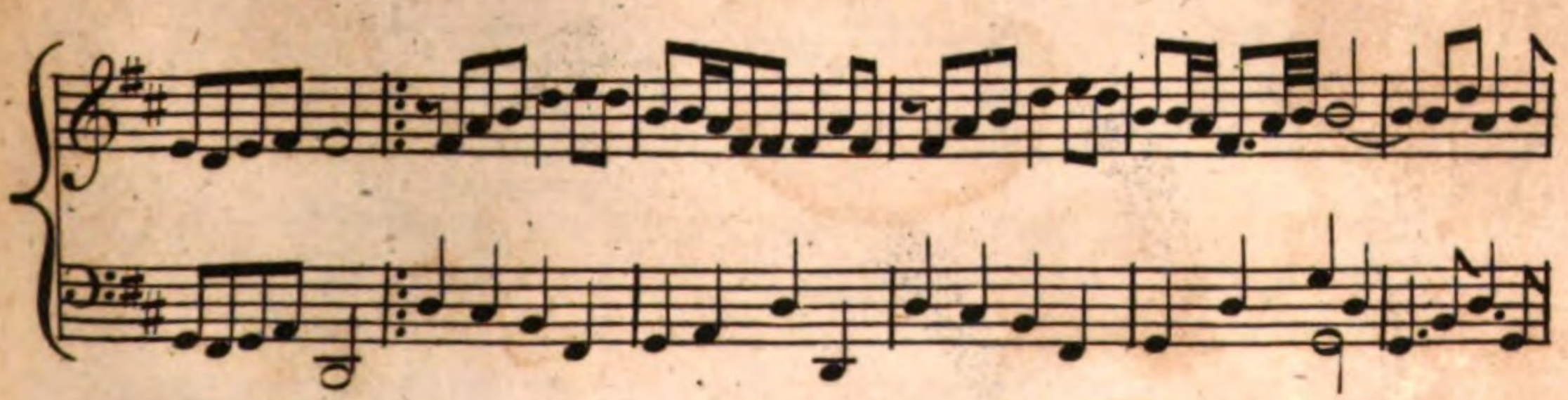

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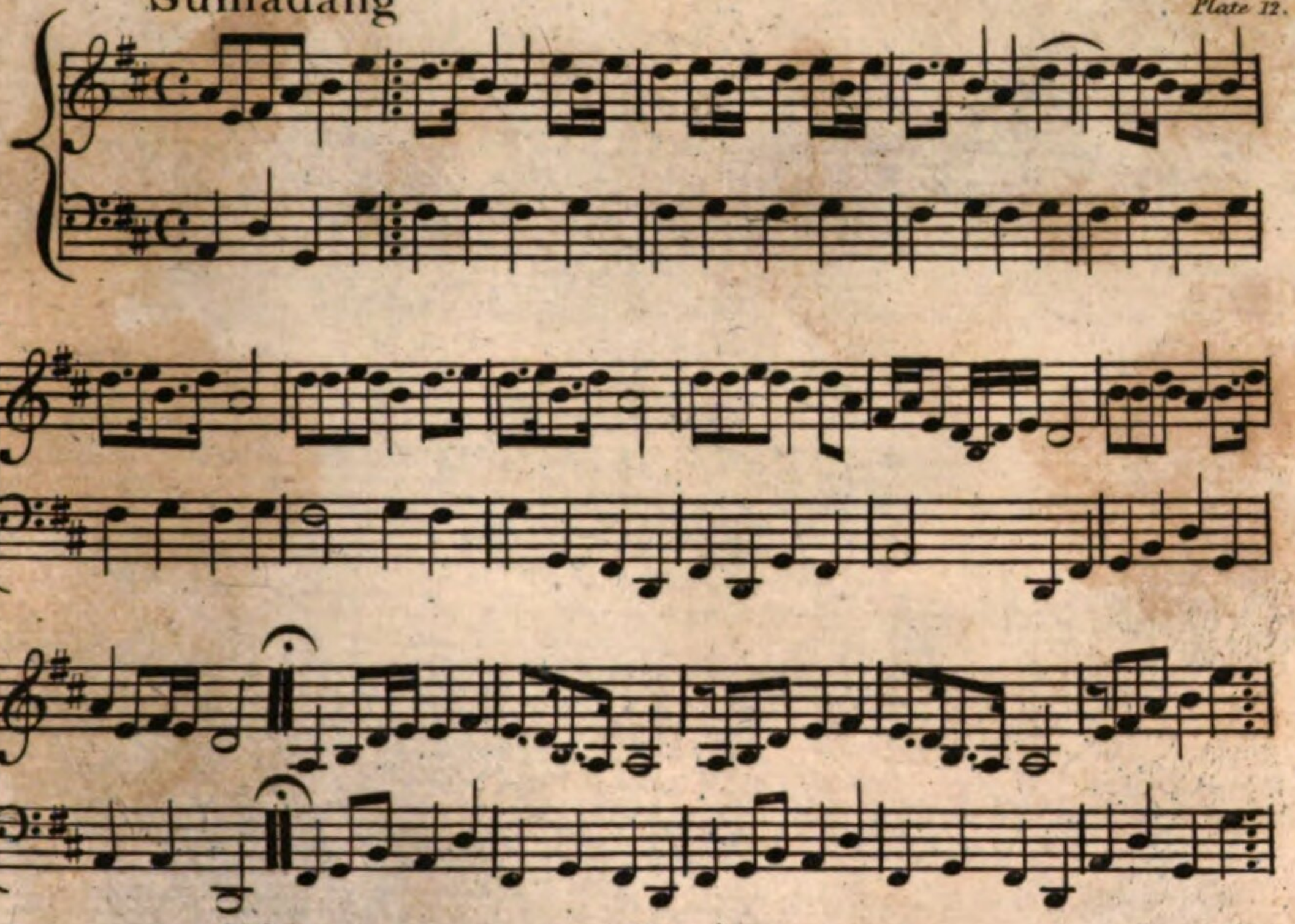
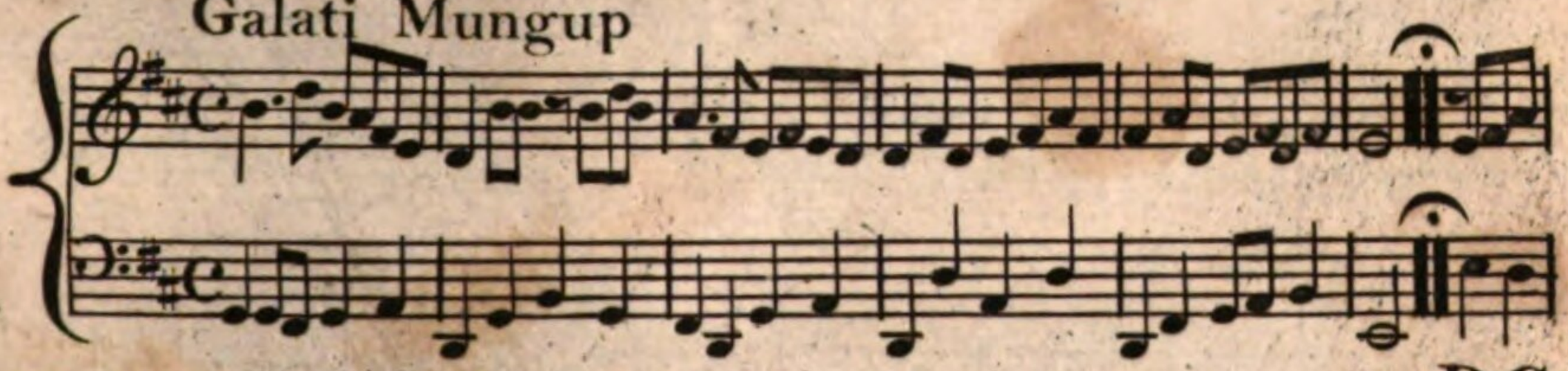
Sumadang



Galati Mungup



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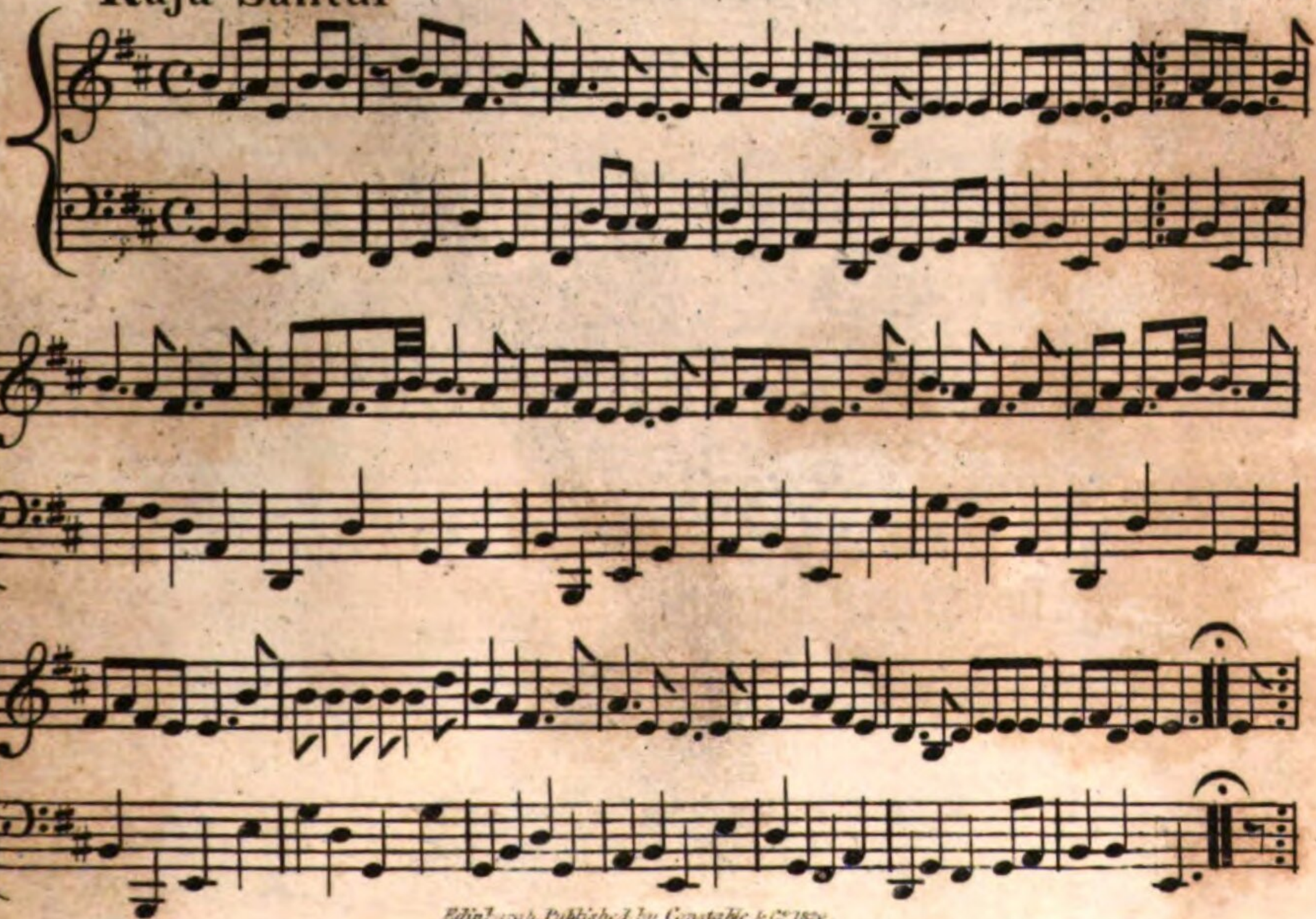

Edinr. Engh. Published by Constable & Co. 1826

Longki

Slow

Malay tune

Moderato

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BOOK IV.

AGRICULTURE.

CHAPTER I.

GENERAL REMARKS ON THE HUSBANDRY OF THE INDIAN ISLANDS.

Extraordinary richness and variety of the husbandry of the Indian islands.—Division of the subject.—Seasons.—Soil.—Descriptions of tillage.—Cattle.—Implements of husbandry.—Irrigation.—Dressings.—Systematic rotation of crops unknown.—General reflections.

THE agriculture of the Indian islands is unquestionably more rich and various than that of any portion of the globe. The indigenous productions of the country are valuable and useful; many of them so singular that no other part of the world has, or perhaps is capable of producing them. To the varied list of native products the connection with strangers has added an extensive catalogue; and several of the useful vegetables of China, of the country of the Hindus, of Arabia, of Europe, and America, are naturalized in the Archipelago. Of

this highly interesting and important subject I shall endeavour, without tiring the reader, to furnish him with a full account. This will be comprised in five short chapters, under the following heads: 1*st*, "General Remarks on the Husbandry of the Indian Islands;" 2*d*, "Husbandry of the Materials of Food;" 3*d*, "Husbandry of Articles of Native Luxury;" 4*th*, "Husbandry of the Materials of Native Manufactures and Arts;" and, 5*th*, "Husbandry of Articles chiefly for Foreign Exportation." In this comprehensive view of the husbandry of the Indian islands it will be found, that the rich variety of product which I have enumerated is far from being accumulated in one spot or island, and that, in rendering an account of it, it will be necessary to embrace the whole range of the Archipelago. The agriculture of the different islands is often, notwithstanding the apparent similarity of climate, as opposite as if each country belonged to a different zone.

I proceed to a detail of the first division of my subject, premising, that I hold chiefly in view the husbandry of the great materials of food, and the western countries of the Archipelago, especially Java, where that branch of agricultural industry is carried on in a degree of perfection unknown to the rest.

In relation to agriculture, the only essentially useful division of seasons is into a wet and a dry.

The year, as is sufficiently known, is divided, in countries situated within the tropics, almost equally into a wet and dry half. The sun is always sufficiently powerful to quicken vegetable life; it is moisture alone that is wanted. The wet half of the year is, therefore, naturally the season of germination; the dry that of fructification. They may not unaptly be denominated the spring and autumn of those countries. In relation to agricultural purposes the climate is also varied according to the elevation of the land; and, in countries close to the equator, the labours of agriculture are pursued in the various climates which occur from the level of the ocean, and a heat of 84° of Fahrenheit's thermometer, to an elevation of six thousand feet, and a consequent diminution of 20 degrees of temperature. The configuration of the land occasions local varieties. Where plains of considerable extent occur the drought is greater than usual. In some situations the vicinity of mountains occasions an unusual fall of rain; and in others, the interruption of the periodical winds by extensive ranges of mountains occasions a total inversion of the seasons.

Such is the strength of the sun's rays at all times, that a great many of the productions of agriculture grow indiscriminately throughout the year, with the assistance of the incidental showers which fall even in the dryest seasons. Others require the

copious floods of the wet season, or artificial irrigation, to supply their place. This gives rise to a most essential distinction in the agriculture of all those countries,—a division of the husbandry, and even of the land itself, into wet and dry. The languages of Europe have no terms to express this distinction, which in the Indian islands is so natural and obvious. The terms marsh-land and upland are not sufficiently comprehensive or distinct. The lands appropriated by their situation to the wet culture are, in the Javanese, and almost all the other languages of the Archipelago, termed *Sawah*, and the dry lands in the Javanese *Tăgal*. The tropical year may without impropriety be said to consist of two agricultural years, for within its circle two distinct and independent crops may, and are indeed very generally raised.

Of countries so extensive, and of such various geological structure as the Indian islands, it would be in vain to attempt giving any general definition of the soil. Those islands and districts, of which the geological formation is secondary trap rock, are, as in other parts of the world, remarkable for their fertility. The existence of mountains of considerable elevation, and of plains of considerable extent, alternating with each other, perhaps contribute as much to the productiveness of the soil as its chemical composition. Mountains of great elevation attract the passing clouds, and

from the sides of them are poured down in those equatorial regions perennial streams, which are sources of fertility from the double cause of bringing soil from the mountains, and furnishing water for irrigation. To the concurrence of all these causes Java owes its peculiar fertility.

The least fertile islands, or rather districts, for many of the islands are far too extensive to be comprehended in this limited definition, are those of granitic and other primary formations with which the metals abound. More limited causes of inferior fertility are the existence of low ranges of hills, of elevations unequal to attract the passing clouds, and to produce streams to fertilize the neighbouring lands.

The deepest and richest moulds of Java are the alluvial soils of the valleys, at the foot of the loftier mountains; there it is found of a most extraordinary depth, commonly ten and twelve feet, and not unfrequently as much as fifty. The richest moulds are of an ash colour. As we recede from the mountains it takes a darker colour, probably containing too great an admixture of vegetable matter, and is of inferior fertility. The worst soils are of a red brick colour, containing a large portion of oxyde of iron, and little vegetable mould. Such soils prevail in hilly tracts of no great elevation. The best soils, indeed, are perhaps necessary for raising in perfection the higher descriptions

of the *Cereal gramina*, particularly rice ; but a powerful sun and abundant moisture everywhere make some amends for sterility of soil. Everywhere the plains and mountains are either covered with a luxuriant herbage or tall forests ; and it is probable there are few acres in the extensive regions of the Indian islands, that, with a dense population and in an improved state of society, are incapable of yielding some productions necessary or useful to man.

The tillage of the improved tribes is of *four* kinds. Such is the paramount importance and value of the rice culture, that all lands bear a value in reference to their capacity of producing this grain. This is the constant test applied to them. The *first* and lowest description of tillage is that which consists in taking a fugitive crop of rice from forest lands, by cutting down the trees and burning them along with the grass and underwood. In the languages of the western tribes this is termed *humah* or *ladang*. It is only practised in the least improved parts of the country, and in lands not yet appropriated. It, of course, implies the rudest beginnings of agricultural industry. The waste of labour in this mode of culture, and the precariousness of the returns, must be sufficiently obvious. Lands of this description no where yield rent. The *second* description of cultivated lands are true upland, or lands in frequent

cultivation, which cannot, however, by natural or factitious means be flooded. These always yield a rent, and, by immemorial usage in Java, that rent, when rice is the product, is considered to be one-third of the neat produce. The *third* description of lands are such as receive the benefit of flooding in the course of the periodical rains. These usually yield one abundant harvest of rice every year, but seldom more. The *fourth*, and most valuable description of lands are such as may be flooded at pleasure by artificial irrigation. These, besides the certainty of their production, often yield two crops of marsh rice yearly; and very generally one crop of rice and a green crop. By immemorial usage, the rent exacted from all lands which either by natural or factitious means can be flooded, is one half the neat produce; and, *cæteris paribus*, such is their fertility, that the actual value of their produce, in the present state of agricultural industry, is *six-fold* that of dry lands.

The skill of the Indian islanders in agriculture is far greater than we should be led to expect in their state of society. In furnishing a sketch of it, I shall hold in view its most perfect form, as it is presented in Java.—The buffalo and the ox are the cattle employed by the Indian islanders in the labours of agriculture. The horse, though abundant, has never been had recourse to. The buffalo is the favourite, and the ox is not prevalent, ex-

cept in the countries which either are now, or were in former times, the seats of the Hindu religion. In Java the buffalo, a powerful, heavy, and slow animal, delighting in marshy situations, is naturally preferred in the rich deep plains where the great rice crops are principally raised. The ox, possessing less strength, but more hardihood and activity, is used in the light upland soils.

Suited to the state of society, the implements of agriculture are few and simple. For general purposes they may be said to consist of a plough, a harrow, a hoe, a bill, or large knife, and a sickle. The plough consists in Java of three parts,—a body, a beam, and a handle. Like the Hindu plough, it has no share. * The soc is tipped with a few ounces of iron, and the earth-board is carved out of the body of the plough; the wood is substantial teak; the yoke is of bamboo cane. One man conducts the plough, and with a long whip guides the cattle, which never exceed two in number. The Javanese harrow is a large rake with a single row of teeth or tine. Over the beam of it is placed a bamboo cane, on which the person who guides the harrow sits, as well for his own ease,

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* The Malay word *Tangala*, which is evidently derived from *Nangala* in Sanskrit, would seem to point out that the Malays acquired the use of the plough from the Hindus. In the other dialects, however, the term is native.

Javanese Hoe

Pruning Knives

Javanese Sukle

Javanese Harrow

Javanese Plough
with Yoke.

Bantet or Javanese Gnomon

Engraved by W. H. Lizars

AGRICULTURAL IMPLEMENTS &c.

Edinburgh Published by A. Constable & Co. 1820

bour, I have seen an extensive tract of waste land covered in a few months with a rich harvest. We cannot wonder that men even in their state of society should be aroused to exertion by an improvement which multiplies the productive powers of the earth in a sextuple ratio.

The paramount importance of the culture of marsh rice makes every other species of tillage a matter of secondary importance. The fertilizing process of irrigation almost supersedes the use of other dressings, or at least causes them to be neglected. None of the Indian islanders ever apply any kind of manure directly to the land. In process of time, when the rice lands are exhausted, and the poorer lands are in more request, dressings will be applied to the upland soils, and the refinements of agriculture will approximate them more nearly in value to the lands capable of submersion.

Though no dressings be applied directly to the land, some processes are pursued which, to a certain degree, are equivalent to them. In reaping the principal crops, particularly the rice crop, the best part of the straw is left on the ground, and into this ample stubble the village cattle are turned in until it be exhausted. During the short period in which the land is permitted to lie fallow, the cattle are constantly fed in the rice grounds, and, as the dung is not removed for the purpose of fuel,

as among the people of Hindustan, the land benefits by this accidental dressing. To this it is to be added, that, immediately before ploughing, the whole of the remaining stubble and dry weeds are systematically burnt on the ground, and the carbonaceous refuse spread on the land as a manure. It may be presumed that experience has ratified the utility of a practice which is general, and which is, in some respects, parallel to that of paring and burning among our agriculturists.

The refinement in the science of agriculture, which consists in pursuing a rotation of crops, is unknown to the Indian islanders. The Javanese, however, at least, understand the advantage of relieving the land by alternating green and white crops, and in the most improved parts of the country pursue it systematically. This rotation is performed within the year. In the wet half they grow a crop of rice, and in the dry half some species of pulse, farinaceous root, or an annual cotton. In the richer lands, and those which have a perennial supply of water, the land is, however, scourged by the *perpetual* succession of a double harvest of rice.

The husbandry of the Javanese may be said to exhibit, upon the whole, much neatness and order. Two or more crops are never, according to the slovenly practice of the Hindus, cultivated in the same field. Neither are the lands tilled in common

according to the practice of that singular people, so destructive to industry. The peasant and his family bestow their labours exclusively on their own possessions. The Javanese pursue the labours of agriculture with pleasure, and consider them rather as an enjoyment than a task. It is here only that their industry assumes an active and systematic character. The women take a large share of the labour. The work of the plough, the harrow, and mattock, with all that concerns the important operations of irrigation, are performed by the men, but the lighter labours of sowing, transplanting, reaping, and housing, belong almost exclusively to the women.

CHAPTER II.

HUSBANDRY OF THE MATERIALS OF FOOD.

*Cultivation of rice.—This grain known by one name throughout the Archipelago.—Mountain and marsh rice.—Culture of fugitive crops of mountain rice by burning the forest lands.—Culture of rice in dry arable lands.—Culture of rice in marsh lands by the periodical rains.—Culture of rice by artificial irrigation.—Sowing and reaping.—Fecundity of rice.—Maize.—Probably an object of culture before the discovery of America.—Modes of culture.—Fecundity.—Pulses.—*Two *chiefly objects of attention.—Cultivation of plants with nutritive roots.—The yam or Igname.—Sweet potatoe, or* Batates.*—Kăntang, or Javanese potatoe.—Talas.—European esculent plants.—Wheat.—Common potatoe.—Garden stuffs.—Native culinary plants.—The cucumber.—The onion.—The capsicum.—Oil-giving plants.—The cocoa-nut.—The ground pestachio.—Ricinus, or Palma Christi.—Sago.—Is the principal farinaceous food of the people of the eastern portion of the Archipelago.—Cultivation.—Native country of the sago palm ascertained from the evidence of language.—Mode of reaping the sago harvest, and preparing the farina.—Mode of preparation for storing.—Edible mushrooms and worms generated from the refuse.—Fecundity of sago.*

THE subjects of the present chapter are the *Cereal gramina*, pulses, farinaceous roots, oil-giving plants, and sago.

Rice, (*Oryza sativa,*) as is sufficiently well known, constitutes the chief material of the food of the civilized people of the old world inhabiting the countries within the tropics, and of the improved tribes of the Indian islands with the rest. Of the time and manner in which the culture of it was introduced it would be in vain to look for any record. From the evidence of language, the only one which can be safely trusted in investigating whatever refers to the origin and history of barbarous nations, two important facts are determined,—that rice is an indigenous product, and its culture a native art,—and that *one* improved tribe taught and disseminated that art. With trifling corruptions, rice, in its two forms of husked and unhusked, are known by the same terms (*padi, bras*) in all the variety of languages and dialects which prevail from Madagascar to the Philippines, and these terms are native, and bear no resemblance to those of any known foreign language. The most refined and improved form of culture (*sawah*) is also very generally known by the same term, and the details of husbandry in regard to it are so identically the same, that we cannot hesitate to pronounce that they had the same origin. We need only quote the peculiar manner of sowing,—the invariable practice of transplanting,—and the singular practice of reaping. At the same time that the improved husbandry

which is implied in the culture of marsh rice appears to be traced to one origin, the more common and humbler operations of agriculture, it may be inferred from language, originated with each tribe independently of its neighbours. We may conclude this from the distinct name, for example, which every tribe generally has for the plough, the harrow, the mattock, &c.

There are two distinct descriptions of rice cultivated throughout the Indian islands, one which grows without the help of immersion in water, and another for which that immersion is indispensably requisite. In external character, there is very little difference between them, and in intrinsic value not much. The marsh rice generally brings a somewhat higher price in the market. The great advantage of this latter consists in its superior fecundity. Two very important varieties of each are well known to the Javanese husbandman, one being a large productive but delicate grain, which requires about seven months to ripen, and the other a small, hardy, and less fruitful one, which takes little more than five. The first we constantly find cultivated in rich lands, where one annual crop only is taken, and the last in well watered lands, but of inferior fertility, where two crops may be taken. Both of these, but particularly the marsh rice, is divided into a great number

as to give the implement the necessary weight to insure the effectual performance of its work. The same yoke and the same cattle are used for the plough as the harrow. The hoe is wood, having the edge tipped with a little iron. The handle is about two feet and a half long, which, according to European notions, renders it somewhat less inconvenient than the shorter one used by the Hindus, which compels the workman to perform his labour half sitting. This tool is used as a hoe, as a spade, as a shovel, and as a pick-axe. All labour performed with it is tedious and expensive. A blow upon a stone, or working upon an indurated clod of earth, will often loosen the iron, or shiver the whole instrument into fragments. The Javanese sickle or reaping-knife is a very peculiar instrument, which is better represented by a drawing than by words. Its object is to nip off separately each ear of rice, with a few inches of the straw, for which purpose it is grasped in the right hand, and the operation effected with a dexterity acquired by habit, notwithstanding the imperfection of the instrument.

Of the Javanese implements of husbandry, as well as of their agricultural processes in general, it may be mentioned, that they are more perfect, and imply a greater degree of intelligence than those of the Hindus, and perhaps, indeed, than those of any Asiatic people, the Chinese and na-

tions of their stamp of civilization excepted. This is the more remarkable as the indications of civilization among them in other matters, particularly in the arts more purely mechanical, imply in general an inferiority. Have not the advantages of climate, soil, and water, peculiar to the country of the Javanese, led that race into an improvement in the science of agriculture beyond their rank in the scale of general civilization?

The agricultural stock of the Javanese peasant, as now enumerated, is comparatively of small value. The following, which are the prices in a part of the country where the population is most dense and food the highest, may be considered a fair estimate:

* A pair of buffaloes, -	L.	2	10	0
A plough, with yoke,		0	2	0
A harrow, -		0	1	0
Two hoes, -		0	1	6
Two bills, - -		0	4	0
	L.	2	18	6

Upon the discovery or the introduction of the culture of a valuable grain which grows by immersion in water,—which draws a principal source of its nourishment from that element,—and through the agency of which the mechanical labours of the

* A pair of oxen cost only in the same place L. 1, 15s.

husbandman are prodigiously facilitated, while it supersedes expensive dressings, and almost the necessity of renovating the fecundity of the soil by attention to rotation of crops, principally rests the prosperity of the husbandry of the Indian islands, and, indeed, of all countries in which rice is the chief material of food. The important part of the agriculture of the Indian islands, therefore, necessarily derives all its energy from irrigation, of which an account in some detail becomes necessary. In whatever situation rice is cultivated by immersion, the land appropriated to this use is divided into small chequers of an area not exceeding two or three hundred square yards, surrounded by dikes not exceeding a foot and a half high, the use of which is to retain the water of irrigation for the nourishment of the plants. When the culture depends on the periodical rains, the charge of these dikes constitutes, as far as irrigation is concerned, the only care of the husbandman; but the greater quantity of the corn of Java is raised by the help of factitious irrigation. The simple contrivances put in effect by the natives to insure a supply and distribution of water on this principle are pleasing specimens of industry. The sources of that supply are, indeed, in general, so obvious and easy, that a little industry and perseverance, rather than efforts of skill and capital, are required to insure

it. We discover neither in Java, nor in any other country of the Archipelago, any of those enormous tanks of the southern part of Hindustan, on which the agriculture of whole provinces entirely depends. Neither does any portion of the agriculture of the Indian islands depend on the overflowing of rivers, as does that of Egypt and Bengal. The principal care of the husbandman is to dam the brooks and mountain streams as they descend from the hills, and before the difficulty has occurred which would be presented by their passage through the deep ravines, into which they would naturally flow. From this circumstance the crests of the mountains, and the valleys at the foot of them, the lands of greatest fertility, are also those best supplied with water; and here necessarily are presented the finest and richest scenes of Javanese husbandry. The slopes of the higher mountains and the smaller hills are here formed into terraces highly cultivated, and the valleys rendered almost impassable from the frequency of the water courses. Not an accessible spot is to be seen in the season that is not covered with a rich harvest; and if we take into account—the brilliant tints of an equatorial sky,—the vicinity of mountains of ten thousand feet high, the more elevated portions of which are covered with forests of perpetual verdure,—valleys thickly strewed with groves of fruit trees, hiding the cottages of the peasantry,—together with the

peculiar richness of the rice crop itself, which far excels that of all the other *Cereal gramina*, we may imagine that rural industry cannot well be contemplated, in any portion of the globe, to greater advantage.

Occasionally the process of irrigation is somewhat less simple than now represented. This is the case when the larger rivers are dammed after their descent into the plain. An officer of the government then assumes the superintendence of the distribution of water, and receives in recompense a commission, payable in kind on the amount of the crop. We shall see, in another place, that the sovereigns of Bali claim the land-tax on this principle.

In the existing state of society and rural industry in Java, and other countries, it may be safely asserted, that the progress of agriculture chiefly rests on the facilities afforded to the irrigation of the land. The brooks and rivers of Java, for example, have yet by no means been taken the greatest advantage of, and in many situations, tanks, similar to those of the Deccan, might be constructed with little difficulty. This is one of those subjects, the advantages of which the natives fully comprehend, and such is their spirit and intelligence relating to it, that a very little encouragement induces them to undertake with avidity the formation of a drain, or the cutting of a canal. With wonderfully little la-

of sub-varieties, * characterized by being awned, or otherwise, having a long or round grain, or being in colour, black, red, or white. †

The *rudest*, and probably the earliest practised mode of cultivating rice consists in taking from forest lands a fugitive crop, after burning the trees, grass, and underwood. The ground is turned up with the mattock, and the seed planted by dibbling between the stumps of the trees. The period of sowing is the commencement of the rains, and of reaping that of the dry season. There is in this mode of tillage no transplanting. The rice is of course of that description which does not require immersion. This mode of cultivating rice is followed only among the more savage tribes who want skill and industry to undertake the more difficult but productive modes, or among the more improved tribes in such dry and sterile tracts as do not afford lands fitted for the latter. The practised traveller recognizes the traces of this culture in a few green

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* "In almost every plant, culture, as it is more generally diffused, induces numerous varieties."—*Remarks on the Husbandry and Internal Commerce of Bengal*, p. 33. The mountain rice does not exist in Bengal, but the varieties of marsh rice are as numerous as in the Indian islands.

† The most singular variety is that called by the Malays *Pulut*, and by the Javanese *Kăttan*, the *Oryza glutinosa* of Rumphius. This is never used as bread, but commonly prepared as a sweetmeat.

patches among the thick forests of the mountain villages.

The *second* description of rice tillage consists also in growing mountain or dry land rice. This tillage differs from the last chiefly by the situations in which it is practised. These situations are the common upland arable lands, lands, in short, which, from their locality, cannot be subjected to the process of flooding. The grain in this mode of culture is sown in the middle of the dry season, by dibbling or by broad-cast, and reaped in seven or five months, as the grain happens to be of the larger or smaller variety. In this mode of culture no lands are of sufficient fertility to yield two crops within the year, and in poor lands it often happens that a fallow of one, two, or even three years, is necessary to renovate the soil. An European soon learns to distinguish this mode of culture, by the absence of the checquered appearance produced in the marsh rice lands by the dikes of irrigation,—by the superior extent of the fields,—by their being frequently surrounded with an imperfect hedge,—and by the resemblance of the culture itself to that of the grains of Europe.

The culture of rice by aid of the periodical rains is the *third* mode of tillage. Of course, the grain is of that kind which requires submersion, and the process of sowing and reaping is determined with

precision by the seasons. With the first fall of the rains, the lands are ploughed and harrowed, no difficult task when the indurated soil is softened or rather reduced to a liquid mud by the water of irrigation. The seed is sown in beds, usually by strewing very thickly the corn in the ear. From these beds the plants, when twelve or fourteen days old, are removed into the fields, and thinly set with the hand. This practice of transplanting is universal. The plants are constantly immersed in water until within a fortnight of the harvest, when it is drawn off to facilitate the ripening of the grain. The period of harvest is determined by the nature of the grain, but usually takes place towards the middle of the dry season.

The *fourth* and last mode of cultivating rice is the most refined of all, and may be considered to imply the highest improvement of the art of husbandry among these people. It consists in forcing rice by artificial irrigation, and is found only to prevail in the most improved parts of the Archipelago, and in lands of the happiest situation.*

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* The grain is necessarily of the description which thrives in water *only*, and this equally, whether in high or low situations. The illustrious Baron Humboldt is mistaken, or rather been misled by the erroneous report of Mr Titzing, when he imagines that the rice growing in Japan, China, and other places on the terraced slopes of mountains, is the

This mode does not depend upon the seasons, and hence we see in the finest parts of Java, where it chiefly obtains, at any given season, and in the same district; within, indeed, the compass of a few acres, rice in every state of progress. In one little field, or rather compartment, the husbandman is ploughing or harrowing; in a second he is sowing; in a third transplanting; in a fourth the grain is beginning to flower; in a fifth it is yellow; and in the sixth the women, children, and old men, are busy reaping. This is no unusual spectacle, but such as the ordinary traveller may see every day. Lands which can be inundated at pleasure almost always yield a white and a green crop within the year, and to take two white crops from them, whether a judicious practice or otherwise, is very common. I have seen lands which have produced from time beyond the memory of any living person two yearly crops of rice. When this practice is pursued, it is always the five months grain which is grown. The rapid growth of this variety has, indeed, enabled the Javanese husbandman, in a few happy situations, to urge the culture to the amount of six crops in two years and a half.

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dry land rice. It is always the same as described in the text. The difference between this and true mountain rice culture could not be mistaken by any person that took pains to inquire.

Rice of whatever description is reaped and stored in the same way. The whole field is not reaped at once, but each portion of the grain taken successively as it ripens, so that, in the desultory manner in which the operation is performed, a very small field with many reapers may occupy a period of ten or twelve days in reaping. With the singular sickle already mentioned, the ear is nipped off with a few inches of the straw attached, and forthwith transported to the village by the manual labour of the reapers, for cattle or carriage are very rarely used. At the village the corn is sufficiently dried by a day or two's exposure to a powerful sun, when it is tied up in sheaves or bundles, and deposited in the little granaries of wicker work, one of which in Java is found attached to every cottage, as represented in one of the plates of this work. The operation of threshing or treading out corn by means of cattle is never practised in the Indian islands. It sometimes, chiefly in the case of mountain rice, becomes necessary to separate the seed from the straw, which is then done by treading or rather rubbing the sheaf between the feet, an operation effected with considerable dexterity. Commonly the grain is stored for use, and transported to market in the straw. Even when put into the mortar to be husked, it has not until then been separated from the straw. The natives seldom store husked rice, for in this state the grain is highly perishable in

a warm and damp climate, and with their imperfect means of securing it. On the contrary, with its thick impervious husk, it is almost imperishable, and will keep for years without alteration. The operation of husking is performed by the women in large wooden mortars, with pestles of the same material.

The fecundity of rice depends so much upon circumstances, that it is not possible to state a general result. We have to consider the quality of the soil,—the mode of husbandry pursued,—and the nature of the grain, whether the larger and more productive, or the smaller and less productive.

Rice cultivated in a virgin soil, by burning the trees, underwood, and grass, will, under favourable circumstances, give a return of five and twenty and thirty fold. Of mountain rice cultivated in ordinary upland arable lands, fifteen fold may be looked upon as a good return. In fertile soils, when one crop a year only is taken, marsh rice will yield a return of twenty-five seeds. When a double crop is taken, not more than fifteen or sixteen can be expected. In the fine province of Kădu, an English acre of good land, yielding annually one green crop, and a crop of rice, was found to produce of the latter 641 lbs. avoirdupois of clean grain. In the light sandy but well watered lands of the province of Mataram, where it is the common practice to exact two crops of rice yearly,

without any fallow, an acre was found to yield no more than 285 lbs. avoirdupois of clean rice, or an annual produce of 570 lbs. These are the results of several trials made by myself.

After rice, *Maize* or Turkey corn (*Zea Maiz*) is the most important production of agriculture among the great tribes of the Archipelago. The word *Jagung*, which I imagine to be purely native, is the term by which this plant is known from one extremity of the Archipelago to another. There can, therefore, be little doubt, as in the case of rice, that one tribe instructed all the rest in its culture. As far as a matter of this nature is capable of demonstration, it may also be conjectured, that maize was cultivated in the Indian islands before the discovery of America,* and that the plant is an indigenous product. The name bears no analogy to that of any language of America, although, in respect to their other exotic productions, whether animal or vegetable, either the native term, or one which points at the origin of them, is invariably preserved in the languages of the Indian islanders. I need only enumerate the pepper plant,—the mango fruit,—the pulse called *Kădăle*,—(*Phaseolus Max*,) the sheep re-

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* "It is no longer doubted among botanists," says the Baron Humboldt, "that Maize, or Turkey corn, is a true American grain, and that the old continent received it from the new."—*Political Essay on New Spain.*

ceived from the Hindus, the orange and ground pestachio received from China, the coffee received from Arabia, and the pine apple, the tobacco plant, the potatoe, and the Turkey (*Gallo-pavus*) received from America, through the medium of the European nations.

Considered as an article of food, maize bears the same rank in the Indian islands in relation to rice, that oats or barley do to wheat in Europe. It is considered as an inferior grain, and in the richest parts of the country forms but an inconsiderable portion of the food of the people. Of late years the culture, in Java, has greatly increased with the increase of population, and as the lands fitted for the culture of marsh rice had become scarce. Over mountain rice, it has the advantage of being more fruitful and hardy. The use of dressings and a more skilful husbandry, in other respects, would, however, in a more improved state of society, give the mountain rice a superiority, since, as an article of nourishment, it is confessedly more agreeable. Maize grows luxuriantly in every country of the Archipelago, and in every climate of it, as well in the hot plains on the level of the ocean and under the equator, as in the highest elevations, in which the labours of agriculture are pursued.* It thrives

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* Maize does not suffer from cold until the mean temperature falls to 45° of Fahrenheit, and no heat is injurious to it.

tolerably also in very indifferent soils, and with little care. Several varieties of it are known, but in an agricultural view, like the mountain and marsh rice, the most important distinctions depend on the periods they take to come to maturity. The smaller grain requires but five months to ripen; the larger takes seven. Their respective productiveness is in this proportion.

Maize, like mountain rice, is sometimes cultivated as a fugitive crop in forest lands, after the trees and grass have been burnt. Now and then it is taken as a second crop in the dry season from marsh rice lands, but the most usual mode of culture is in upland arable lands. The most usual season for sowing is the dry season, but such is the hardihood of the plant, and the equality of the climate, that it is frequently sown and reaped at every season of the year.

Maize, in the agricultural economy of the Indian islanders, is never separated from the ear, or reduced to meal for the purpose of being stored. This is, because it has never become in the Indian islands an article of general traffic and demand. In a few cases it is dried in the ear, and transported in this bulky and expensive form from one district to another, but more commonly it is consumed on the spot, either in its fresh state, or by boiling the entire grains in the manner of rice.

Indian corn is the most productive of all grains.

In the Indian islands it is so carelessly cultivated, and indifferent lands are so commonly assigned to it, that the full amount of its fecundity cannot be displayed. In the province of Kădu in Java, I find that four and five hundred-fold are not an unfrequent return. In poorer lands the returns are often found not to exceed sixty and seventy seeds, but one hundred may be looked upon as a fair average in the common modes of culture in very ordinary lands.

Maize is remarkable for the local inequality of its growth. It grows in the same field in patches, thriving luxuriantly in one spot, and almost totally failing in another. From repeated trials made by myself in the thin soil of Mataram in Java, I found that an English acre of land, which afforded a double crop, yielded of the smaller grain 424.25 lbs. avoirdupois of clean maize for each crop, or 848.5 lbs. annual produce. This was of grain which did not yield above a hundred-fold for the seed.

Millet, and other small grains, are raised in the Indian islands in very small quantities, and do not, therefore, deserve particular notice.

A variety of *pulses* form an important article of the husbandry of Java, and the other western parts of the Archipelago. In Java, they are principally cultivated as green crops in the dry season, in succession to marsh rice, in lands artificially irrigated.

The whole class of leguminous plants are called by the generic name *Kachang*.

The most commonly cultivated as green crops, are two broad leaved plants called *Kachang Kădăle*, *(Phaseolus max,)* and *Kachang Ijo*, *(Phaseolus radiatus.)* The name of the first is a word of the Telinga language, from which I infer, that it has been introduced from India in comparatively recent times. The obligations of the Indian islanders to the Hindus, in matters of substantial utility, are not great. Except pepper and cotton, there is no useful vegetable production known by a Sanskrit name, and, except the variety of pulse now mentioned, and perhaps the mango, none known by any Hindu word whatever. We must naturally suppose from this, that the Indian islanders were in possession of all the useful plants now known to them before their acquaintance with the Hindus, or at least that their knowledge of agriculture was acquired without the assistance of the Indian colonists. The *Kădăle* is a hardy grain. After the rice crop is off the ground, the seed is sown among the stubble without any other preparation of the land than a temporary submersion in water.

The *Kachang Ijo*, or green pulse, is a superior grain to the last, but is more delicate, and requires more care in the culture. The Chinese colonists manufacture *Soy* from it, and it is for their consumption chiefly that it is raised. Of the *Kădăle*

ten seeds are considered a good return, and of the other about seven may be an average.

In the Indian islands, there are cultivated a great variety of plants with nutritive roots. The principal are the yam, the sweet potatoe, the *kăntang*, or Java potatoe, the arrow root, and the common potatoe.

The *yam*, or *igname* of America, (*Dioscorea alata,*) known in the western parts of the Archipelago by the name of *Ubi*, or *Uwi*, in the Ternati called *Ima*, in the Macassar *Lami*, in Amboyna *Heli*, and in Banda *Lutu*, appears to be indigenous in the Indian islands, and to have been cultivated from time immemorial.* The varieties are very numerous. The yam frequently grows to the enormous volume of forty and fifty pounds weight. It affords but a coarse and rather insipid aliment, and is not much sought after by the natives. It is chiefly cultivated in the poorer countries of the Archipelago, where the *cerealia* are scarce or † unknown.

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* Several of the smaller islands are called after the name of this plant, and are known by it from the earliest acquaintance of Europeans with the Archipelago.

† "In locis ubi oryza crescit, ubium, parum, vel fere vix colitur. In Java et Baleya magis ex oblectamento, et ad obsonium quam ex necessitate, a Celebe vero, et Boetona ubii cultura quam maxime exercetur, ac porro per Moluccas,

A more valuable and more extensively cultivated root is the *sweet potatoe*, which, after maize, constitutes the most important material of the vegetable food of the Indian islanders of the west. This is the *Batates* of America, and the *Convolvulus batatas* of botanists. In Java, it is cultivated in ordinary upland arable, or, in the dry season, as a green crop in succession to rice. The sweet potatoe of that island is the finest I ever met with. Some are frequently of several pounds weight, and now and then have been found of the enormous weight of fifty pounds. The sweetness is not disagreeable to the palate, though considerable, and they contain a large portion of farinaceous matter, being as mealy as the best of our own potatoes. The natives are fond of them, and in all the stalls and booths of the market-places, they are exposed for sale ready cooked, as well as in their raw state.

There can be little doubt but this plant was introduced by Europeans, from the names which it receives in every one of the native languages. The Malays sometimes call it *Batata*, but the Amboynese, the people of Ternati, of Amboyna, and Banda, more frequently designate it the *Castilian*, that is, the Spanish yam. The people of Bali

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Amboynam, et Bandam, usque in cunctas insulas ad Eurum sitas, immo usque ad Novam Guineam."—*Rumphii Herb. Amb.* Tom. V. p. 347.

and Java have dropped the generic term, and the latter corrupt *Castela* into *Cătela*.

A tuberous root, *(Ocymum tuberosum,)* frequently cultivated in Java, and much resembling in appearance the American potatoe, is called in the language of the country *Kăntang*. It is small, round, and contains much farinaceous matter, but has no great flavour; it is an inhabitant of the hot plains.

The poisonous *Manioc* of America *(Jatropha manihot)* has been introduced into the Indian islands, and may be seen growing wild in the hedges, but the natives of these countries, possessed of such a variety of vegetable food superior to that which the manioc affords, put no value upon it, and do not cultivate it. The name by which it is known, *Ubi Bălanda*, * would seem to infer that it was introduced by the Dutch, and, at all events, points out that it was introduced by Europeans.

A species of *Dioscorea (Dioscorea tryphylla)* exists abundantly in the wild state throughout the Archipelago, and is occasionally cultivated for use. The name of this plant in Malay and Javanese is *Gadung*. In each of the other dialects of the Archipelago, it is known by a distinct and peculiar name, which it is unnecessary to repeat. This plant, like the Manioc, requires a tedious dulcification.

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* A corruption of Holland.

A great variety of aroid plants *(Arum)* exists in the Archipelago. The one chiefly cultivated is the *Arum esculentum* of Linnæus. The husbandry of this plant is practised in upland soils, and is chiefly pursued where the *cereal gramina* are scarce. In the rich lands of the central and eastern part of Java, we rarely, for example, see it, but in the poorer lands of the west it is very frequent. The arrow root is called in Javanese *Talas*, in Malay *Kăladi*, in Ternati *Bete*, in Amboynese *Inan*, and in the language of Banda *Kădu*. From this diversity of name we pronounce it to be an indigenous product of the Archipelago.

Of the plants of temperate regions affording materials of subsistence introduced into the Indian islands, the number is small, and the production very limited. The plains are too hot for them, and their successful cultivation seems in Java to require an elevation of 4000 feet above the level of the sea. Java is the only country in which they are at present raised, because the only country possessing elevated tracts of land in which Europeans have colonized, however imperfect that colonization. When, under a wise system of colonial administration, Europeans are permitted freely to colonize, we may expect an extensive cultivation of all their favourite materials of subsistence.

Wheat, which the Malays, who only know it by name, call *Gandum*, after the Persians, is called by the Javanese, who have been instructed by Eu-

ropeans in the culture of it, by the Dutch name of *Trigo*. It is cultivated by the Javanese precisely in the same manner in which they cultivate mountain rice, and, before the ear is formed, a field of the one is not to be distinguished from the other. From the ignorant and careless culture pursued in regard to it, the grain is dark-coloured, small, and of inferior quality. A more skilful husbandry would redress these defects, but it is probable that the cold regions of the elevated tracts of Java may always be used to greater advantage in raising other productions, than in growing wheat, as the Indian islands lie so near to Bengal, the cheapest country in the world for wheat, and from whence, from its vicinity, it is probable it may always be more cheaply imported than reared at home.

The Dutch of very late years have introduced the American potatoe (*Solanum tuberosum*) into Java. Such is the supineness of the European colonists, and their imperfect occupation of these countries, that the event cannot be dated farther back than thirty years. In Malay, the potatoe is called *Ubi Europa*, or the European yam, and in Javanese *Kăntang Holanda*, or the Dutch *Kăntang*, names which sufficiently describe its origin. The potatoe reared in Java is of good size and excellent quality, being, I think, more delicately flavoured than those raised in Europe, and much superior to those cultivated in any part of Hindustan.

They grow abundantly without dressings, and almost indiscriminately at every season of the year, so that the care of storing them is unnecessary, and the fresh root is ready for the table at every season. During the British possession of the island, the culture was greatly extended from the increased demand for them, and within the last few years the natives of the mountains and of the valleys near them have begun to use them as an article of diet. But as the production of this root is confined to the high lands, and the quantity of food yielded by them from a given quantity of land and labour, is much smaller than afforded by other tuberous roots, as the yam, the *arum*, and, above all, the sweet potatoe or *Batates*, it is evident they can never become, in those climates, an article of general consumption.

In the same mountainous lands in which the potatoe and wheat are cultivated, are grown in much perfection some of the garden stuffs of Europe. The most successfully raised are artichokes, cabbages, and peas. The carrot has not succeeded so well. Turnips were only introduced by the English, who also introduced water-cresses, which latter thrive with a most extraordinary luxuriance, not only in the hills but in the hottest plains.

The natives of the Indian islands cultivate a variety of indigenous culinary plants, the most im-

portant of which are the cucumber, and the chili, or capsicum.

The *cucumber* (*Timun*) is extensively cultivated in fields, like the more ordinary productions of agriculture; in Java frequently as a second crop in the dry season in succession to rice. The natives are partial to them, and consume them in large quantities.

The *onion*, from its native name *Bawang*, appears to be an indigenous product of the Indian islands, but it is a native of the hills and tracts of moderate elevation, and not of the plains, where it does not thrive. In the elevated lands of Java it is extensively cultivated, and forms an article of trade between these and the plains, and, indeed, of considerable exportation from the island to the neighbouring countries.

The *capsicum* or *chili* is a native of the Indian islands, and constantly found in its wild state. It is called by different names in the different languages; thus, in the Javanese it is *Lombok*, in the Malay *Chabai*, in the Bali *Tabia*. Rumphius tells us, indeed, that the capsicum is called *Chili* by the natives, and hence he argues its American origin; but, I imagine this learned and indefatigable person must have been misled by the barbarous jargon of the European colonists of Amboyna, for no such name as this is known in any genuine dialect of the Archipelago. The same variety of names will be found to prevail with all the useful

plants *found abundantly in their wild state*, as the rattan, the bamboo, the banana, and the Aren palm, (*Borassus gomutus*,) while the higher classes of vegetable productions, as the *cerealia* and farinaceous roots, which, as in other countries, can rarely be traced to their wild state, and have only been multiplied by the industry of man, will be found distinguished by the same name in every language of the Archipelago. The inference to be drawn from this curious fact, so often adverted to in this work, is, that, through the civilization and influence of one tribe, the culture of the higher classes of vegetable food, with other matters of improvement, was communicated to the rest. In the less populous districts, the capsicum is cultivated in gardens, but in the more populous in fields, like the common productions of agriculture. The *chili* is a hardy plant that will grow almost any where. Culture appears to increase its size, but to diminish its pungency. The natives of the country, who have little taste for black pepper, for cloves, or nutmegs, the abundant productions of their country, and so much in request among foreigners, use immense quantities of the capsicum, the consumption of which is as universal, and perhaps equal in quantity to that of salt.

Among the Indian islanders there is a great consumption of oil as an article of food, increased by the total absence of any substitute drawn from

the animal kingdom. The plants which afford oil, either for food or the arts, are principally the *Coconut*, the *Ground Pestachio*, the *Palma Christi*, and *Sesamum*.

The coconut tree (*Cocos nucifora*) is cultivated from one extremity of the Indian islands to the other, but, like the other more valuable productions which afford nutriment to man, is not discoverable in its wild state. In the small uninhabited islands near the coasts of larger ones, coconut trees are found in great quantities on the shores but never in the interior, which shews they have been floated accidentally to the former from the main-land,—that they are self-propagated,—and not indigenous in these situations.* By one or other of the terms *Kălapa* and *Nyor*, and sometimes by both, the coconut is known in every country of the Indian islands from Sumatra to the Philippines; nay, these names extend even to Madagascar and the Friendly Islands, with other portions of Australasia. How wonderful to discover this useful plant silently propagated over many thousand leagues, among hundreds of barbarous tribes of dissimilar languages, whose very names and situations are unknown to each other! The coconut grows most quickly, most luxuriantly, and to the greatest size, near the sea coast. The size of the tree and fruit diminish as

* Marsden's Sumatra, p. 84.

we go into the interior, and in the higher mountains the tree is long in bearing fruit, and the fruit is of a dwarfish size.* In lands favourable to its growth it produces fruit in five years. It is grown generally in the irregular gardens which surround the cottages of the peasantry, of which, for utility and ornament, it is the most distinguished production. It is for the pulp of the nut that it is almost exclusively grown. This pulp, in its early stages, is used in the cookery of the natives in a great variety of forms, and when the nut is in a greater state of maturity, the oil is extracted from it. This oil is the most esteemed, and costly of all that is in common use among the Indian islanders. When freshly expressed it is pure and tasteless, but soon acquires a rancidity not disagreeable to the natives of the country, but extremely offensive to Europeans. It is too expensive for burning, and is, therefore, almost exclusively used as an edible oil. The fibrous husk of the coconut is seldom in the Indian islands converted, as in Ceylon and the Maldives, into cordage, because the fine country they inhabit affords other better and cheaper materials. Neither is the shell used, except among the more savage tribes, for culinary or

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* "Here, said a countryman at *Laye*, if I plant a coconut I may expect to reap the fruit of it; but in *Labun*, an inland district, I should only plant for my great-grand-children."—*Marsden's Sumatra*, p. 86.

other purposes, a practice superseded by their cheap pottery and the use of metallic vessels.

Next to the coconut tree, the most considerable source of the supply of oil is the *ground pestachio*, (*Arachis hypogæa.*) This is sometimes called by the natives *Kachang tanah*, or ground pulse, occasionally *Kachang Japan*, or Japanese pulse, but more frequently *Kachang China*, or Chinese pulse, from which last name it is to be implied that the production was introduced by the Chinese. At what period this happened is not determined, but I strongly suspect it was long after the establishment of Europeans in the Archipelago, and that the Chinese, who, under the auspices of the Dutch, first cultivated the sugar cane for the manufacture of sugar, cultivated at the same time, as in their own country, the ground pestachio, to afford an oil-cake for dressing the cane lands. From this subsidiary and local employment it may have spread more generally among the natives of the Archipelago.

The ground nut is the hardiest and one of the most valuable of all the productions of Javanese husbandry. It is usually grown in common dry arable lands, and will, indeed, thrive tolerably well in such indifferent soils as are, without a more improved system of management than is now practised, unfit for the growth of almost any other production.

The natives express the oil by a tedious and ex-

pensive process not worth detailing, but the Chinese have instructed them in a more intelligent method, which consists in grinding the seeds in a simple mill, consisting of two wooden rollers moved by the labour of cattle. The cake which remains after expression is used by the Chinese as a dressing to cane lands, as already mentioned, and in the lands attached to their manufactories of sugar, we see the culture of the cane and ground pestachio judiciously combined, as well with this view as to relieve the land by the occasional intervention of a green crop. The leaf of the ground pestachio resembles that of clover, and, like it, affords excellent food for cattle. The oil is generally confined to culinary uses.

The *Ricinus*, or *Palma Christi*, is the next most important of the plants which yield oil. It is very commonly known in the languages of the Archipelago by the one name of *Jarak*, yet is asserted by Mr Marsden to be found abundantly in its wild state on the coasts. * It is a hardy plant, and thrives alike in the burning plains and coldest parts of the mountains. This is the only plant which the Javanese almost ever intermix in the same fields with other articles of cultivation. On this principle it is frequently thinly interspersed in

* History of Sumatra, p. 92.

fields of mountain rice, with the growth or reaping of which it does not materially interfere. The castor oil is never, I think, used medicinally by the Indian islanders, but is the principal material used in lamps.

Of all the productions of the Archipelago the one which yields the finest edible oil is the *Kănari.* This is a large handsome tree, which yields a nut of an oblong shape nearly of the size of a walnut. The kernel is as delicate as that of a filbert, and abounds in oil. This is one of the most useful trees of the countries where it grows. The nuts are either smoked and dried for use, or the oil is expressed from them in their recent state. The oil is used for all culinary purposes, and is more palatable and finer than that of the coconut. The kernels, mixed up with a little sago meal, are made into cakes and eaten as bread. The *Kănari* is a native of the same country with the sago tree, and is not found to the westward. In Celebes and Java it has been introduced in modern times through the medium of traffic.

One important and singular article remains to be described, the *Sago Palm, (Metroxylon sagu,)* a tree from which the inhabitants of the eastern portion of the Indian Archipelago derive the farinaceous nutriment which other nations of the world derive from the *Cereal gramina*, or farinaceous roots. The description, which is useful to our present purpose,

may be very shortly given. Except the *Nipa*, it is in stature the humblest of the palm tribe, its extreme height seldom exceeding thirty feet; and, except the *Gomuti*, it is the thickest or largest, a full grown tree being with difficulty clasped between both arms. In the early period of its growth, and before the stem has formed, this palm has all the appearance of a bush of many shoots. Until the stem has attained the height of five or six feet, it is covered with sharp spines, which afford it protection against the attack of the wild hog, or other depredation. When, from the strength and maturity of the wood, this protection is no longer necessary, the spines drop off. Before the tree has attained its full growth, and previous to the formation of the fruit, the stem consists of a thin hard wall, about two inches thick, and of an enormous volume of a spongy medullary matter, like that of alder. * It is this medullary matter which affords the edible farina, which is *the bread* of the islanders. As the fruit forms the farinaceous medulla disappears, and when the tree attains full maturity,

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* "Exterius trunci lignum, seu potius cortex duos tantum crassus est digitos,——Reliqua interior pars, repleta est alba, humida, ac fungosa medulla, quam omnipotens Creator hisce indigenis concessit loco oryzo seu alius frumenti, ex quibus panes pinsitur uti infra indicabitur."—*Rumphii Herbarium Amboinense*, Tom. I. p. 73.

the stem is no more than a hollow shell. The utmost age of the tree does not exceed thirty years. The sago palm is an inhabitant of low marshy situations, and does not grow in dry or mountainous places. A good sago plantation, or forest, is a bog knee-deep. * There is but one species of this palm, but four varieties, viz.—the cultivated,—the wild,—*one* distinguished by the length of the spines on the branches,—and *one* altogether destitute of spines, which last is usually called by the natives the Female sago. The first and last afford the best farina, the second a hard medulla, from which the farina is difficultly extracted, and the third, which has a comparatively slender trunk, an inferior quantity of farina.

The sago, like other palms, is propagated from the seed or fruit, which is of inconstant shape and size, from that of a prune to that of a pigeon's, and that of a pullet's egg.

The true native country of the sago palm appears to be that portion of the Archipelago in which the easterly monsoon is the boisterous and

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* "Arbor hæc optime crescit in cænoso seu aquoso solo, ubi ad genua limo immerguntur homines. In sabulosis quidem crescit etiam locis, si modo sint humidi, hincque nullæ sagu arboris silvæ adeo sunt minutæ, ubi non unus alterve aquæ rivulus adest."—*Rumphii Herbarium Amboinense*, Tom. I. p. 77.

rainy one. This geographical range embraces the eastern portion of Celebes and Borneo,—to the north the island of Mindanao,—to the south Timur, and to the east New Guinea. It is most abundant in the islands most distinguished for the production of the clove and nutmeg, and its geographical distribution seems co-extensive with that of these spices. The great island of Ceram is, of all others, the most distinguished for the production of the sago palm. Here it is found in immense forests in its wild state. If this palm be an indigenous product of the western countries of the Archipelago, as sometimes insisted upon, and not an exotic, it is a very rare one, and the pith is seldom extracted to be used as bread.

From attending to the various designations under which the sago palm is distinguished, some very curious and interesting inferences may be drawn. Of all the plants which afford a supply of nutritious farina for human aliment, the sago affords at once the most obvious, easy, and abundant one. The pith of the tree, when ground down in a mortar, deposites the farina, at once, without difficulty. Unlike, also, to the other great sources of farinaceous food, it exists in nature in great abundance, and it is probable, such is the extent of the native forests of it, that ages must have passed away before the first savage inhabitants were necessitated to have recourse to any mode of culture.

The sago palm is not, therefore, as in the case of the *cerealia* and the other useful and nutritive plants, multiplied only by the industry of man, through the instruction of *one* tribe, known every where by one common name; but each tribe has its own vernacular term for it, and very commonly a distinct one for the farina obtained from it. Thus, in the Ternati language, the tree is called *Huda*, in that of Amboyna, the tree *Lapia*, and the farina *Sagu-maruka*; in Banda, the tree is called *Romiho*, and the farina *Sangyera*; in Macassar the tree is called *Rambiya*, and the farina *Palehu*; and in the Mindanao language the tree receives the denomination of *Lăbi*. This diversity of speech in the language of the people in whose country the sago palm is indigenous, may be contrasted with its meagreness in that of those in whose country the palm is either little known or an exotic. The term, both for the tree and for the *farina*, in all the languages of the western tribes of the Archipelago is *sagu*,* which appears to be nothing more than an abbreviated form of the Amboynese term for the *farina*. This is just what strangers would naturally do. They took the name of the commodity in its familiar commercial form, and, ignorant of distinctions, gave the name

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* The Malays sometimes give the Macassar name of *Rambiya* to the tree.

of a part to the whole. In Java I have never seen the sago tree, except when cultivated as an object of curiosity, and it is there considered always as an exotic.

It remains to give a sketch of the sago harvest, if I may use such an expression, and the modes of preparing the *farina* for consumption, with the secondary uses to which this palm is applied. There is no regular fixed season for extracting the pith, which is taken as occasion requires, and as the individual trees become ripe. The length of time in which this happens depends on the nature of the soil in which the sago grows. Fifteen years may probably be reckoned an average time for the tree to come to maturity. It is not, however, by a calculation of the tree's age, but by its appearance, or by an actual experiment on the pith, that the period of maturity is determined. The inhabitants of the Moluccas mark six stages in the progress of the maturity of the medullary matter, the earliest of which is marked by the appearance of an efflorescence of a mealy appearance on the branches, and the last by commencement of fructification. The pith may be extracted in any of these stages, and sometimes the natives, trusting to their experience, proceed to the harvest from the mere appearance which the tree presents. More frequently, however, a hole is bored in the trunk, and some of the pith actually extracted, and its maturity examined.

When the pith is ascertained to be ripe, the tree is cut down near the root, and the trunk subdivided into portions of six or seven feet long, each of which is split into two parts. From these the medullary matter is extracted, which, with an instrument of bamboo or hard wood, is forthwith reduced to a powder like saw-dust. The process of separating the *farina* from the accompanying bran and filaments is simple and obvious, and consists merely in mixing the powdered *medulla* with water, and passing the water charged with the *farina* through a sieve at one end of the trough in which the mixture is made. The water so charged is made to pass into a second vessel, where the farina falls to the bottom, and, after two or more edulcorations, is fit for use. * This is the raw sago meal, which

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* The process described in the text is that practised in the Moluccas. That practised at Mindanao is somewhat different. Dampier describes it in his wonted simple and happy manner. "The valleys," says he, "are well moistened with pleasant brooks, and small rivers of delicate water, and have trees of divers sorts flourishing and green all the year. The trees in general are very large, and most of them are of kinds unknown to us. There is one sort which deserves particular notice, called by the natives *Libby* trees. These grow wild in great groves of five or six miles long, by the sides of the rivers. Of these trees sago is made, which the poor country people eat instead of bread three or four months in the year. This tree, for its body and shape is much like the Palmetto

keeps, without further preparation, a month. For further use, this meal is made into cakes, which keep a long time. These cakes are formed in moulds of earthenware, divided into compartments. The moulds are first heated, and the dry meal being thrown into them, a hard cake is formed in a few minutes, so that one heating of the moulds serves to bake several series of cakes. These cakes, according to the country in which they are made, are of various forms and sizes. Those of Amboyna are half a foot long, and three or four inches broad; those of Ceram much larger, and excessively hard. These cakes, strung on a filament of cane, are the form in which the sago is chiefly exposed for sale in the markets, and that in which the largest proportion of it is consumed. A considerable quantity of the sago meal is also consumed in

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tree, or the cabbage tree, but not so tall as the latter. The bark and wood is hard and thin, like a shell, and full of white pith like the pith of an alder. This tree they cut down, and split it in the middle, and scrape out all the pith, which they beat lustily with a wooden pestle, in a great mortar, or trough, and then put it into a cloth, or strainer, held over a trough, leaving nothing in the cloth but a light sort of husk, which they throw away; but that which falls into the trough settles in a short time to the bottom like mud, and then they draw off the water, and take up the muddy substance, wherewith they make cakes, which being baked, proves very good bread."—Vol. I. p. 310, 311.

the form of a pap or *panado*, which is commonly eaten with a fish soup prepared for the purpose. * For exportation, this finest sago meal is mixed with water, and the paste is rubbed into small grains of the size and form of coriander seeds. This is the

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* This favourite dish of the natives of the spice islands is described as follows by Rumphius: "Nunc quoque agemus de mirabili pulto *Papeda* ejusque preparatione; qui cibus est rediculus quidem spectatoribus, delicati tamen saporis, isque, sequenti preparatur modo; accipe recentis farinæ *sagu-mantæ* manipulam, per partes infunde aquæ callidæ, continuo agita, statim tum acquiris tenacem pellucidam pultem coctum amylum referentem, quæ Portugallico vocabulo *Papeda* dicitur, Amboinensibus *Lappia* vocata, utque hæc puls grate comedatur, paratum debet esse condimentum ex jure piscium *Bocassan* dictum, ex succo limonum acido, aromatibusque confectum, cujus pauca pars patellæ planæ infunditur, seu conchæ presertim Nautali Majoris seu folio *Sentellariæ primæ* cujus folia instar patinæ natura formavit, dein *Papeda* tenuibus bacillis tam diu agitatur donec grumulus adhereat qui prædicto imponitur condimentum, quantumcunque velimus, grumuli enim condimento obducti non sibi agglutinantur, iique tum sine masticatione sorbillando, quam calide fieri possit, ingeruntur, frigidi enim nauseosi sunt, hocque puls *Papeda* tali humectata condimento est grati saporis, appetitum excitans, paucum vero dat nutrimentum, ac mox digeritur, ita ut, licet pleno ventre a mensa recedamus, intra unam alteramve horam consumptis sit: Gratissimus est cibus iis, qui antecedenti inebriati fuerunt die, vapores enim dissipat, nausam levit gulam, atque nauseabundo appetitium excitat ventriculo."—*Rumphii Herbarium Amboinense*, Tom. I. p. 80.

appearance of sago which we always see, and is too well known to require further description. In whatever way prepared, the *farina* of the sago is inferior in quality to the Cerealia, and the superiority of the latter is sufficiently confessed by the preference shewn to them even by the natives of the sago countries themselves. *

The different portions of the sago palm are applied to various economical uses. The hard wood of the trunk, called *Kururung*, is used in their buildings, and in their bridges, as well as in making large troughs, and such vessels. The stem of the branch, called *Gaba-gaba*, which is deeply channelled on the upper surface, is of still more general application, being used in house building, in fortification, and in the palings of gardens and other inclosures. The leaf is in general use as thatch. The bran, or refuse of the pith, called *Ela*, is used in feeding hogs. When thrown into heaps, it putrifies, and an edible mushroom of very delicate quality grows on the

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* Forrest, after a long eulogy on sago bread, makes the following acknowledgment: "I must own my crew would have preferred rice, and when my small stock which I carried from *Balambangan*, was near expended, I have heard them grumble and say, 'We must soon eat Papua bread.'"—*Forrest's Voyage to New Guinea.* Forrest's men consisted chiefly of Malays, natives of the western portion of the Archipelago.

heaps. In the same heaps, as well as in the decayed wood, a worm of a white colour, with a brown head, is generated, resembling a palmer-worm. The natives of the Moluccas, like the ancient Romans, who held certain wood-worms dainties, consider them great delicacies, and some Europeans, who have conquered their first aversion, have entered into their tastes.

Of the fecundity of the sago palm, we want means to speak with precision. Rumphius and Valentyn, with the inattention to matters of this nature which characterized their times, are silent, and we cannot rely on more recent authorities. The mass of nutritive matter afforded by the sago palm is certainly prodigious, and far exceeds that of all other plants. Five and six hundred pounds weight, it appears, is not an unusual produce for one tree. Allowing, however, for the plants that perish, and for unproductive or barren ones, perhaps we shall not err greatly if we take the average rate of produce at three hundred pounds avoirdupois. Supposing each tree, then, to be 10 feet asunder, as is practised with the other larger palms, an English acre will contain 435 trees, and yield 120,500 pounds avoirdupois of raw meal, or above 8000 pounds a year.

CHAPTER III.

HUSBANDRY OF ARTICLES OF NATIVE LUXURY.

The Areca Palm.—The Sagwire or Gormuti Palm.—Palm Wine.—Sugar manufactured from it.—Gomuti.—Sago.—Beetel Pepper.—Gambir.—Tobacco.—Fruits.—The Banana.—Epidermis manufactured into Cloth and Cordage.—The Bread-fruit.—General Remarks on the Culture of Fruits.—The Mangustin.—The Durian.—The Jack Fruit.—The Chămpădak.—The Mango.—Orange and Lime.—The Pine Apple.—The Jambu.—The Guava.—The Papaya.—The Custard Apple.—The Dukuh, Langseh, and Riambia.—The Rambutan.—The Pomegranate.—The Tamarind.—Calabash, Gourd.—Melons and Cucumbers.—European Fruits.—Flowers.

THE subject of this chapter is a rapid sketch of the husbandry of products yielding intoxicating or narcotic juices, and of the culture of fruits and flowers.

Beginning with the first subdivision of this subject, one of the most important articles is the Areca palm, (*Areca Catechu*, L.) This tree is too well known to require any long description. It is a slender graceful palm between thirty and forty feet high, which produces fruit at from five to six years

old, and usually continues to bear to its twenty-fifth year, when the leaves drop off and the tree perishes. The fruit is the only part of this palm applied to use, and it is eaten both in its unripe and mature state. In the former state it is green, succulent, and has a small cavity containing a little sweet-tasted fluid; in the latter, it is of the size of a plumb, and of an orange colour. The exterior part is now a soft spongy fibrous matter, the interior a nucleus, resembling in shape, size, internal structure and colour, a nutmeg, though usually larger and always harder. The nut in this state is a great object of commerce. Rumphius enumerates four cultivated and three wild varieties of this palm.

The areca is a native of all the countries of Asia within the tropics, and is an indigenous product of all the Indian islands. Like all other indigenous products found wild in abundance, it is found to be distinguished in each language by a distinct term, every one of which is native. In Javanese it is called *Jambi*, in Malay *Pinang*, in the Balinese *Banda*, in the dialects of Amboyna *Buah*, *Pua*, and *Huah*, meaning "the fruit, *par excellence*;" in Macassar *Rapo*, in Ternati *Hena*,—these examples are sufficient. The word *Areca*, which, through the Portuguese, has been naturalized in the other languages of Europe, is originally from the Telinga. The physical distribution of the areca palm is more

extensive, but its geographical one more limited than that of the coconut. It thrives at a greater distance from the sea, and in lands of greater elevation. It is propagated from the ripest seeds or fruits, first sown in beds, and afterwards transplanted. These plantations are usually close to the villages, and are highly ornamental. It thrives in ordinary soils, and in all situations, but the neighbourhood of the sea is conducive to the perfection of the fruit, and the warmer and lower the land, the more rapidly does the tree advance to maturity. In the climate of the Indian islands little care is required in weeding or watering this palm. No manure is ever used, nor is the culture of a precarious and expensive nature, as in the countries of the Deccan. * In the fifth and sixth year, as already mentioned, the areca produces fruit, which appears in large bunches from three or four *spadicæ*, and the tree gives two crops, the whole annual produce amounting to, not less at an average than, fourteen pounds. As areca palms are planted usually at the distance of seven feet and a half, it follows that the produce of an acre is 10,841.5 lbs. avoirdupois. This explains the extraordinary cheapness at which the grower is enabled to sell the

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* Buchanan's Journey through Mysore, &c. the most valuable work on the statistics of India hitherto given to the public.

nut, which is often as low as half a dollar per *picul* of 133⅓ lbs. avoirdupois.

One of the most useful and abundant of all the palms is the *Sagwire* or *Gomuti*, (*Borassus gomutus.*) This affords the principal supply of that saccharine liquor which is used so much by the natives as a beverage, or for the extraction of sugar. The *gomuti* is the thickest of all the palms, but shorter than the coconut. It is readily distinguished from all other palms by its rude and wild aspect.* The fruits, which are about the size of a medlar, and of a triangular form, grow from the shoots of fructification, on long strings of three or four feet. The fruit is in such abundance that the quantity depending from a single shoot is more

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* Rumphius gives us the following singular but accurate description of the appearance of this palm: "Eodem fere modo ac Calappus crescit. Ejus autem truncus crassior est, ac multo humilior, et vix altior Pinanga, ad radicem æqualis nec protuberans cujus coma atro-vridis est, incompta et adspectu tristis, unde facile ab aliis distinguitur arboribus. Truncus in annulos itidem quodammodo est divisus inæquales, et hirsutus, qui per muscum pluresque Filicum et Polypodii species adeo obsessi et concreti sunt, ut vix dignosci possint, antequam a *Tiffadoribus* depuretur truncus; ita ut silvestri ac vili forma haud male ebrium æmuletur rusticum, qualis variis consulis ac pannosis vestimentis evigilat incomptis intricatisque titubans capillis; immo foedissimæ formæ inter omnes est arbores."—Tom. I. p. 57.

than a load for a man. The fleshy outer covering of this fruit is of a poisonous quality, or at least affords a juice of a highly stimulating and corrosive nature, which, when applied to the skin, occasions great pain and inflammation. The inhabitants of the Moluccas were in the practice of using, in their wars, in the defence of posts, a liquor afforded by the maceration of the fruit of the *gomuti*, which the Dutch appropriately denominated *Hell water*. The interior of the fruit, freed from this noxious covering, is prepared and extensively used by the Chinese as a sweetmeat.

The principal production of this palm is the *toddy*, which is procured in the same manner as from other palms, or in the following mode: One of the *spathæ* or shoots of fructification is, on the first appearance of fruit, beaten for three successive days with a small stick, with the view of determining the sap to the wounded part. The shoot is then cut off a little way from the root, and the liquor which pours out is received in pots of earthenware,—in bamboos,—or other vessels. The *gomuti* palm is fit to yield *toddy* at nine or ten years old, and continues to yield it for two years at the average rate of three quarts a day. When newly drawn the liquor is clear, and in taste resembles fresh must. In a very short time it becomes turbid, whitish, and somewhat acrid, and quickly runs into the vinous fermenta-

tion, acquiring an intoxicating quality. In this state great quantities of it are consumed. A still larger quantity is immediately applied to the purpose of yielding sugar. With this view the liquor is boiled to a syrup, and thrown out to cool in small vessels, the form of which it takes, and in this shape it is sold in the markets. This sugar is of a dark colour and greasy consistence, with a peculiar flavour. It is the only sugar used by the native population. The wine of this palm is also used by the Chinese residing in the Indian islands in the preparation of the celebrated Batavian arrack.

A production of great value is obtained from the *gomuti* resembling *black horse hair*. It is found between the trunk and branches, at the insertion of the latter, in a matted form, interspersed with long hard woody twigs of the same colour. When freed from the latter it is used by the natives for every purpose of cordage, domestic or naval. It is superior in quality, cheapness, and durability, to the cordage manufactured from the fibrous husk of the coconut, and has been extensively applied, particularly of late years, to European naval purposes, especially in the manufacture of cables and standing rigging. A single palm in its lifetime yields two crops of this material, each amounting in quantity to about an average of nine pounds avoirdupois. The small twigs found in the hair-like material are used by all the tribes who write

on paper as pens, and they are the arrows used by others to discharge, poisoned or otherwise, from the blow-pipes or arrow-tubes described in a former part of this work.

Underneath the hair-like material is found a third material of a soft gossamer-like texture, which is put to use, and exported to China in considerable quantity. It is applied as oakum in caulking the seams of ships, and more generally as tinder for kindling fire. It is for this latter purpose that it is chiefly in request among the Chinese.

Like the true sago palm, the gomuti affords a medullary matter, from which a farina is prepared. In Java, it is the only source of this material, which, in the western and poorer part of the island, is used in considerable quantity, and offered for sale in all the markets. It is smaller in quantity than the pith of the true sago tree, more difficult to extract, and inferior in quality, having a certain peculiar unpleasant flavour, which the farina of the true sago is without.

The gomuti palm is a native of the Indian Archipelago, and found, I believe, in no other country. It occurs abundantly in the wild state; indeed, except in a few situations, it is hardly ever cultivated, nature producing it in an abundance sufficient for all the present demands of the natives. Like all plants found abundant in the state of nature, the *Gomuti* is distinguished by names as nu-

merous as the languages of the countries which produce it. With the usual copiousness of these languages, on familiar occasions, each useful part of the plant is designated by a specific name. In Malay the tree is called *Anao*, the liquor *Tuwak*, or *Nera*, the soft down *Barun*, and the material like horse-hair *Iju*, or *Gomuti*. It is this last name which our botanists have improperly given to the whole plant. In Javanese the tree is called *Aren*, the material like horse-hair *Duk*, the gossamer-like substance *Kawul*, and the sap *Lăgen*, which means the *sweet material*, by distinction. In the Amboynese language, the tree is called *Nawa*, the material of cordage *Makse*. In the Ternati language, the tree is called *Seho*, in the Bali *Jahaka*, and in the Bima *Naun*. In the Macassar language, the tree is *Monchono*, the sap *Juro*, and in the Mandar the tree is *Akel*, and the sap *Ki*. The Portuguese, I know not for what reason, and other European nations have followed them, call the tree and the liquor *Sagwire*. The fruit and the hard black twigs are also known in each language by specific names, which it were superfluous to mention.

Unlike the coconut tree, the *gomuti* palm does not thrive best in the neighbourhood of the sea, nor on the hot plains on the level of the ocean. It is rather an inhabitant of the mountains, loving the

narrow damp valleys of hilly countries, particularly the vicinity of brooks, or collections of water.

Like other palms, it is propagated from the seed. The Javanese allege that it is most favourably propagated through the seeds voided by the *Luwak*, or *Musang*, a species of polecat, of which the fruit of the *gomuti* is said to be a favourite food. Plantations of this palm are to be found in the western hilly parts of Java.

The fecundity of the *gomuti* palm may be estimated from the amount of its principal products.

The tree comes to maturity in ten years, and is productive for two. In this time it will afford at the rate of three quarts of sap a-day, with eight lbs. of tinder material, and eighteen lbs. of the black horse-hair-like material. This estimate is formed from the produce of the wild tree, and of course supposes no improvement from culture. It may be readily imagined that the improvement in the amount and quality of the cultivated plantations would more than repay the labour of cultivation. The rent which gomuti palms pay in Java to the proprietor is one-third the gross amount of the principal produce or sweet liquor, the same as is paid by all the secondary products of agricultural industry, those raised in dry lands.

The *Betel pepper (Piper betel)* is a very important article of husbandry or horticulture. This plant is too well known to require any description.

It is a pepper vine, reared solely for its aromatic and pungent leaves, * which are used as a masticatory with the nut of the Areca palm, and other occasional ingredients.

Rumphius describes six species of this pepper, and several varieties. Some of them are cultivated, and others grow wild in the forests. The plant appears to be a native of the Indian islands, and, therefore, is known in each language by a distinct name; thus in Javanese it is called *Suro*, in Malay *Sireh*, in the Ternati *Bido*, in the Balinese *Base*, in Amboynese *Amo*. The word adopted in the European languages is from the Telinga, in which it is indifferently pronounced *Betlé*, or *Betrĕ*.

The Betel vine is found in every country of Asia within the tropics, but the kinds cultivated are no where found wild, so that many conjecture that they have been changed from their original form by cultivation. If we were to judge of the native country of this plant by the facility or difficulty with which it is reared, we should conclude it to be a native of countries near the equator. In the Indian islands it is easily reared; in the countries of the Deccan with more difficulty, requiring manur-

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* The flavour of the betel leaf is very peculiar. Rumphius says, "Odorem illius cum nulla possum comparare ne peculiaris enim est odor ex herbaceo et aromatico mixtus." *Herbarium Amboinense*, Tom. V. p. 338.

ing, constant watering, and so much care, that the culture is frequently in the hands of persons whose sole profession it is; * and in the northern parts of Hindustan, again, it is grown almost with as much difficulty as the plants of warm regions in *our* hot-houses.

In Java, the husbandry of this plant is pursued in separate gardens, and lands of the best description, usually in the immediate vicinity of the villages, having a constant supply of water, are selected for it. They are always in lands on the level of the sea, and such, in point of quality, as would yield the largest production of rice.

The Betel is propagated by slips, and the vines supported by poles, or at other times by living trees, different ones being used in different countries of the Archipelago, some of which are found to favour the quantity, but to deteriorate the quality, while other kinds again diminish the quantity, but enhance the quality. The *Randu*, the *Dadap*, and the *Kelor*, are used in Java, and occasionally the areca palm. No manure is ever employed, and not much hoeing or weeding. An attention to irrigation is chiefly requisite.

The Betel vine affords leaves fit for use in the second year, and continues to yield for more than

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* Buchanan's Journey through Mysore.

thirty, the quantity diminishing as the plants grow older.

An article of extensive consumption and traffic is a certain inspissated juice called *Gambir*, (*Gutta gambir,*) similar to the *Terra Japonica*, or *Catechu*, the *Kăt* of continental India. This is obtained, it appears, from two different plants, but chiefly from a climbing or trailing plant, the *Funis uncatus* of Rumphius, and which is itself properly called *Gambir*. The word which we incorrectly write *Gutta* ought to be written *Gătah*, which, in the Malay language, is a common name for any gum, exudation, or inspissated juice of a plant.

Of the cultivation of the *Gambir* plant my friend, the late Dr William Hunter, has rendered a very interesting account in the Transactions of the Linnæan Society. * The plant is cultivated in dry situations, and propagated from the seed. The seedlings are transplanted when about nine inches high, and the plants grow to the height of five or six feet. At the end of the first year, they yield a small crop, and continue to yield two annual crops for twenty or thirty years. The leaf yields the inspissated juice, for which purpose it is boiled in iron pots to the consistence of a syrup. This syrup, when taken off the fire, and allowed to cool, becomes solid, and, being cut into small square cakes, is fit

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* Vol. IX. p. 213, and foll.

for sale or use. The plants are placed in the field at the distance of eight or nine feet. The younger leaves afford the whitest and best *gambir*, and the older a brown and inferior sort. In point of quality, much depends also on the skill with which the process of inspissation is conducted.

The *gambir*, unlike other productions of agricultural industry, is the growth of some of the more western and *poorer* countries of the Archipelago. It is not cultivated in Java, nor the islands to the eastward of it, but abounds on the east coast of Sumatra, at Siak, Kampar, and Indragiri; at Malacca, in the island of Rhio, and on the west coast of Borneo. The culture and manufacture is generally in the hands of the Chinese. The coarser kind is exported in larger quantity to China, to be used in tanning leather, but the principal consumption is as a masticatory with the *Areca* nut and *Betel* leaf. The taste of the Gambir is peculiar, affecting the tongue at first with a mixed sensation of bitterness and astringency, for which we have no name, but which the Malays call *Kălat*, and leaving a lasting and not disagreeable sweetness.

Tobacco (Nicotiana) is of universal consumption among the Indian islanders, and their domestic husbandry supplies the whole of what they use. Every where it is raised in small quantities, but it is only in Java, Mindanao, and Luconia, that it is raised as an article for exportation. The husbandry

pursued in Java is familiar to me, and as it is somewhat peculiar, I shall describe it. The seedlings are raised in beds in mountainous tracts of two and three thousand feet of elevation above the level of the sea, from which they are transplanted into the deep and fertile soils of the plains. The husbandry of raising the seedlings, and bringing the plants to maturity, is not only prosecuted in different climates, but by different people, so that the sale of the young plants is an object of traffic between the mountaineers and the inhabitants of the plain. The rearing of the seedlings in high lands is found necessary to prevent the plant from degenerating, a fact which seems to shew, that it is a native of a colder climate than the plains of Java.

Tobacco is either raised in ordinary upland arable, or in lands in which rice is raised by artificial irrigation. The most abundant and least precarious crops, as well as those of the finest quality, are raised in the latter. Tobacco is what farmers call a scourging crop, and every where the successful culture of it requires the richest soils. In Java it is only extensively prosecuted in such, and the chief production we find to be confined to the very finest provinces, the rich valleys of *Kădu*, *Lădok*, and *Banyumas*, towards the centre of the island, and at the feet of the lofty mountains which are there found. Such is the wonderful fertility of those

lands, that crops as luxuriant as are any where to be found are raised without the help of manure or dressings, so indispensable in the husbandry of this plant in every other part of the world. Those lands afford year after year, alternately, a crop of rice by far the richest I have ever seen, and a crop of tobacco. The only relief they receive is a half yearly fallow, it never being the practice, in such situations, to plant leguminous, or other green crops in succession to rice, as followed in other good lands. The only dressing given is, the fertilizing influence of submersion from the water of irrigation. When under a more improved husbandry, the practice of using dressings to tobacco lands is introduced, it is evident that the culture may be extended to an indefinite amount. When tobacco is raised in such lands as now mentioned, the young seedlings are transplanted in June, or winter, and the crop is reaped in October and November, before the rains set in. The plants rise to the height of six and eight feet, and are prevented from rising higher by the practice of nipping the tops to favour the expansion of the leaves. The crop is reaped by beginning with the lower and coarser leaves, and ending with the smaller and more delicate top ones. An essential distinction in the value of the produce is founded on this mode of reaping, and three distinct qualities of it are consequently known in commerce. The tobacco of Java is always shred

while green, after the leaves have been freed from the fibrous mid-rib. Under the superintendence of the Chinese, it is then very neatly packed in small parcels, and deposited in baskets of a standard weight, for exportation.

The plant is called in all the dialects of the Indian islands by the Haytian name, or a corruption of it, which is with some variation *Tămaku* or *Tămbaku*. It is, indeed, the only word which is the same in *all* the dialects of the old world, a fact which points out its origin, and the surprising fact of its universal and rapid dissemination, which hardly afforded time to corrupt or disguise its orthography. It was not propagated, like other generally disseminated plants, by the slow progress of ages, and intermediately through a thousand tribes of barbarians, but directly and almost momentarily by one people, and that people a civilized one. In the year 1559, fifty-two years after their first appearance in the Archipelago, the Portuguese already planted tobacco in their own country. They must soon have sowed this favourite plant in their new establishments. In the year 1601, the last year of the reign of the prince of Mataram, called *Panămbahan Sedo Krapyak*, the practice of smoking tobacco was introduced in Java, as mentioned in the native annals. The Dutch, who are so partial to this mode of using the drug, and who had been then five years in the island,

must have instructed the natives in it. This period corresponds with that in which the use of the plant was making rapid progress in the northern countries of Europe, being but fifteen years later than that of its introduction into our own. Some have suspected, that the plant was known to the natives before their connection with Europeans, and that they even used it medicinally. The traditions of the natives are what are resorted to as *proof*, but the evidence which depends on their lubricious memories cannot weigh against the unvarying testimony of language. *

Of the principal *Fruits* and *Flowers* used for economical purposes by the Indian islanders, I am now to render a very succinct account. Of the fruits, by far the most important is the *Banana*, Indian fig or plantain, (*Musa Paradisica.*) It is the principal fruit consumed by the Indian islanders, and from its nutritious quality and general use, may, whether used in a raw or dressed form, be regarded rather as an article of subsistence than

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* "A senioribus intellexi Javanis, qui illud a parentibus iterum audiverant, tabaci plantam in Java fuisse notam, antequam ibi fuerunt Portugalli, h. e. ante annum Christi 1496, neutiquam vero ad suctionem, sed tantummodo ad usum medicum, unanimo enim consensu Indi adsentiunt sese tabaci suctionem ab Europæis didicisse."—*Rumphii Herb. Amb.*, Tom. V. p. 225. The opinion in the text will be found a material correction of that expressed in p. 104 of this volume.

of occasional luxury. It is given in large quantities, even to infants at the breast. It no where, however, in the Indian islands is an article of subsistence of the first importance, as in the tropical regions of America. Rice, maize, farinaceous roots, and the farina of the pith of palms, always supersede the necessity of recurring to the use of the banana, an inferior species of aliment. * I think this important fact may be considered as conclusive in favour of the superior physical capacity of the soil of these islands over that of tropical America, if, indeed, the difference, which is not, however, probable, may not have arisen from accidental causes having given to human industry a more beneficial direction in the former than in the lat-

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* "The *banana*," says the Baron Humboldt, "is for all the inhabitants of the torrid zone what the cereal gramina, wheat, barley, and rye, are for the western Asia, and for Europe, and what the numerous varieties of rice are for the countries beyond the Indus, especially for Bengal and China. In the two continents, in the islands through the immense extent of the equinoxial seas, wherever the mean heat of the year exceeds 24 centigrade degrees, the fruit of the banana is one of the most interesting objects of cultivation for the subsistence of man." This observation is extremely inaccurate, and very unlike M. Humboldt, who, to borrow an expression of Mr Gibbon, is seldom a stranger in any age or country. The banana no where in equinoxial Asia, either continental or insular, supersedes or even competes with the cerealia.

ter. The coarser and larger kinds of Banana are roasted or otherwise prepared before being eaten. In America they are dried in the sun for preservation, and occasionally reduced to meal; but in the more civilized and less necessitous countries of the Archipelago, we see such preparations only as matters of curiosity, and the banana is there used only in its raw state, as fruits among ourselves, though, from its cheapness and abundance, more generally.

The Indian islands are the countries in which the banana grows in greatest perfection, and is found in greatest variety. There are at least sixteen distinct species or varieties of the cultivated banana, and five species of wild, whereas in equinoxial America three species only are known in all. Of the cultivated kinds some are large, coarse, and not edible without preparation. The greater number, however, are edible in their raw state, and some varieties acquire by careful cultivation a very exquisite flavour. More generally, however, the character of the fruit, at least to an European palate, is that of mild insipidity.

Of the wild banana, one kind (*Musa textilis*) grows in vast abundance in some of the most northern of the spice islands, and in the great island of Mindanao; in the Philippines forests of it are propagated by nature for the use of man without any culture. These natural groves or forests are

considered as property, and from the fibrous bark or epidermis is manufactured a kind of cloth in frequent use with the natives. It also affords the material of the most valuable cordage, which the indigenous products of the Archipelago yield. This is known to our traders and navigators under the name of *Manilla rope*, and is equally applicable to cables, to standing, or to running rigging.

The names of the banana in the dialects of the Archipelago afford another pointed example of the fact, that wherever an useful plant is found abundantly spread in the wild state, it has a distinct name in each dialect. The name of the banana, unlike that of rice, maize, the sugar cane, and other such productions, is hardly the same in any two languages. In Javanese it is *Gădang*, in Malay *Pisang*, in the Balinese *Biyu*, in Sunda *Chawuk*, in Lampung *Punti*, in Bugis *Unti*, in the Atui, one of the South Sea island dialects, *Maia*, in Madagascar *Ounche*, in Ternati *Koyo*, in Banda and Amboyna *Kula* and *Uri*, and in Ceram *Tema*.

The *Bread-fruit* (*Artocarpus incisa*) is common in the Indian islands, but held in very little consideration. There are two varieties, one with seeds and one without. The last is the true bread fruit, but in size and quality is inferior to that which constitutes the great material of food in the South Sea islands. It is used by the natives as a

common esculent vegetable, and usually roasted for the table.

The variety with seeds is a native of every part of the Archipelago, being found in the wild as well as cultivated state. The true bread-fruit tree, on the contrary, is found wild only in the eastern portion of the Archipelago, and has been propagated but in recent times in the western. It may be strongly suspected, that the Malays and Javanese, in their trading voyages to Banda, to which they chiefly resorted for spices before the intercourse with Europeans, brought it to the western parts. The evidence of language will corroborate this supposition. Throughout the Archipelago the seedy variety is known by a distinct name in each language, as usual in such cases. In Malay it is called *Kălawi*, in Bali *Timbul*, in Macassar *Gomasi*, in one dialect of Amboyna *Amakir*, in another *Umare*, in Banda *Sukunutan*, or the wild *Sukun*. The case is very different with the true bread-fruit. Where indigenous and abundant, it is denominated in each language by a distinct name, but where exotic, by one general name, and that name, as will be seen, is borrowed from the language of Banda, the island from which the western tribes, it is probable, brought it in the course of their commerce. In the languages of the western islands, as the Javanese, the Malay, the Bali, the Madura, the Sunda, the

Lampung, it is invariably *Sukun*, but in the languages of the countries of which it is a native, we have such differences as the following. In the Bugis it is called *Kakara*, in Ternati *Goma*, in one dialect of Amboyna *Soun*, and in another *Sunè*, and in Banda *Sukun*.

Of *Fruits*, more strictly so called, the Indian islands afford by far the most curious, the richest, and the most extensive variety of any portion of the globe. The greater number are indigenous, and some of the finest so peculiar, that all attempts to propagate them in other countries, even of parallel climates, have been found unsuccessful. Besides indigenous fruits, several of the most delicate of other equinoxial regions have been introduced, and are now naturalized. A few of the fruits of temperate climates have also been admitted, and their number and quality will increase in the progress of European colonization.

A great number of the fruits of the Indian islands grow wild, and it is but a very careless cultivation that is bestowed upon any. The principal fruit trees are planted in an irregular straggling manner about the villages. When planted in groves or orchards, the best soils are not selected for them; they probably, indeed, do not require the richest, for I have seen fine fruit and abundant crops in lands considered unfit for raising grain, or even farinaceous roots.

The common peasantry cultivate only the most ordinary fruits, and the most delicate and richest are found but in the gardens or orchards of the great. These take pleasure in selecting the most delicate varieties, but they are outdone by the superior skill and attention of the European colonists, at whose settlements are, therefore, to be found the greatest abundance of fine fruits. Batavia and Malacca are considered the most remarkable places for fruit, and as matters of curiosity fifty different sorts, without reckoning varieties, have often been produced at the same table. This is what could not happen in any other part of the world.

The western countries of the Archipelago, those most remarkable for civilization and the production of the *cerealia*, are also the most abundant in fruits. Several which are indigenous in these appear to have been introduced as exotics in comparatively recent times into the eastern islands.

With respect to the seasons of fruits, some, as the banana, the jack, the bread-fruit, and others, ripen throughout the year. Of fruits usually raised in lands on the level of the sea, the dry season is the natural period of maturation, such as the mango, the mangastin, the durian, &c. They necessarily ripen later in more elevated situations, and as a second crop within the year is very frequent, it thus happens that the luxurious may be supplied with these fine fruits at all seasons.

This is sure to happen in every part of Java, where cultivation has been pushed into the more elevated tracts of country.

Of the indigenous fruits, the *Mangustin (Garcinia mangostana)* is the first in rank. It is the most exquisite of Indian fruits, and, indeed, of all known fruits. It seems to meet the approbation of persons of the greatest diversity of tastes in other matters, whether that diversity arises from peculiarity of constitution, or from national habits and antipathies. It is mildly acid, and has an extreme delicacy of flavour, without being luscious or cloying. In external appearance it has the look of a ripe pomegranate, but is smaller, and more completely globular. A rind about three lines in thickness, something hard on the outside, but soft and succulent within, encloses large seeds, or kernels, surrounded by a soft semi-transparent snow-white pulp, now and then having a very slight crimson blush. This pulp is the edible part of the fruit, and persons in robust health may, without prejudice, eat a much larger quantity of it than of any other fruit. *

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* "Of all those fruits," says Dampier, after enumerating those of Achin, "the Mangastan is, without compare, the most delicate. This fruit is in shape much like the pomegranate, but a great deal less. The outside rind, or shell, is a little thicker than that of the pomegranate, but softer, yet more

The Mangustin is the peculiar production of the Indian islands, and all attempts to propagate it elsewhere have proved unsuccessful. It has been of late years tried at Madras and Calcutta, and attempts to cultivate it in the Isle of France were made as early as the year 1754. *

A wild variety of the Mangustin is found in the woods of Java and Celebes, but the true Mangustin appears to be a native of the *western* portion of the Archipelago only. It refuses to grow in some of the spice islands, and thrives but indifferently in others. The latitude of *Lusong*, in the Philippines, is the highest in which it is brought to grow. It is not found in Siam, nor in Cochin China. Like the more useful plants of rare occurrence in the state of nature, the Mangustin is uni-

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brittle, and is of a dark red. The inside of the shell is of a deep crimson colour. Within this shell the fruit appears in three or four cloves, about the bigness of the top of a man's thumb. These will easily separate each from the other; they are as white as milk, very soft, and juicy, inclosing a small black stone, or kernel."—Vol. II. p. 125.

* "Le mangoustein, ce roi des fruits, selon tous ceux qui en ont mangé, ne vient qu'à la côte de l'Est de l'Inde, on en apporta en 1754, a l'Isle de France, de jeunes plants; il en restait encore quelques uns en 1770, mais en si mauvais état, qu'il n'y a pas d'apparence que cet arbre reussisse jamais dans cette colonie."—*Voyage par Mon. Le Gentil*, Tom. II. p. 690, 691.

versally known by the same name, or very nearly so, having no other than *Manggis*, *Manggisi*, or *Manggusta*, evidently modifications of one term. The wild fruit is known by different names from the cultivated, and those names differ in each language.

The highest rank among the indigenous fruits, in the *opinion of the natives*, is given to the *Durian*, *(Durio Zibethinus,)* not at all excepting even the Mangustin, but most of strangers, from its peculiar and offensive odour, have at first a violent aversion to it. When that aversion, however, is conquered, many fall into the taste of the natives, and become passionately fond of it. The tree which bears the Durian is, among fruit trees, a lofty one. The fruit, in external appearance, has some resemblance to the bread fruit, but is bigger, and the spines of the husk are larger and stronger. As it ripens, its colour assumes a yellowish green. It is near the size of a man's head, sometimes spherical, but occasionally oblongated. When ripe, it is easily divided with the grain, and, when opened, is found to consist of five longitudinal cells, each containing from one to four large seeds, as big as pigeons' eggs, enveloped in a rich white pulp, itself covered with a thin pellicle, which prevents the seeds from adhering to each other. This rich white pulp is the edible portion of the fruit.—To my taste, the Durian excels all other fruits. Though extremely

rich and nutritious, and, one might almost say, partaking more of an animal than vegetable nature, it never cloys, or palls on the appetite, so that a taste for it rather increases than diminishes, and once thoroughly acquired, continues for life. The large seeds, when roasted, resemble chesnuts in taste and flavour. *

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* Dampier's description of the Durian is so inimitably accurate, that I cannot refrain from giving it. "The trees that bear the Durian are as big as apple-trees, full of boughs. The rhind is thick and rough; the fruit is so large, that they grow only about the bodies, or on the limbs near the bodies like the cacao. The fruit is about the bigness of a large pumpkin, covered with a thick green rough rhind. When it is ripe the rhind begins to turn yellow, but it is not fit to eat till it opens at the top. Then the fruit in the inside is ripe, and sends forth an *excellent scent.* When the rhind is opened, the fruit may be split in four quarters; each quarter hath several small cells that enclose a certain quantity of the fruit, according to the bigness of the cell, for some are larger than others. The largest of the fruit may be as big as a pullet's egg. 'Tis as white as milk, and as soft as cream, and the taste very delicious to those that are accustomed to them, but those who have not been used to eat them, will dislike them at first, because they smell like roasted onions. This fruit must be eaten in its prime, (for there is no eating of it before it is ripe,) and even then it will not keep above a day or two, before it putrifies, and turns black, or of a dark colour, and then it is not good. Within the fruit there is a stone as big as a small bean, which hath a thin shell over it. Those that are minded to eat the stones or nuts roast them, and then a thin shell comes off,

The Durian, like the Mangustin, is peculiarly the product of the Indian islands, and will grow no where else. It will not even grow in the neighbouring kingdoms of Ava and Siam, though the envy of the people of these countries, the monarchs of which receive, as valuable presents, a few each season, from the Malay peninsula.—Rumphius enumerates but three varieties of the Durian, one of which, growing in Borneo, is larger than a man's head. I do not find that the Durian tree has ever been detected in the wild state, another proof of the extreme rarity, in the state of nature, of the edible plants on which man sets most value. In the cultivated state, it grows readily enough in ordinary soils, but is in too much estimation to be cheap. It is, indeed, the highest priced of all the fruits of the Archipelago, and one Durian costs more than a dozen of pine-apples. In all the languages of the Archipelago, the name which it bears is, with slight modifications, *Duṛiăn*, a word which, in the Malay language, signifies an "object with spines or prickles." From this etymology it may be conjectured, that the land of the Malays is the original country of this extraordinary fruit.

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which encloses the nut; and it eats like a chesnut."—Vol. I. 319, 320. The great navigator was certainly, by his description, one of the Europeans who conquer their first aversion to the durian, for his lively account is that of an *amateur*.

Of the *Jack* fruit *(Artocarpus integrifolia)* two species occur in the Indian islands, the common *Jack*, and the *Chămpădak*. These two fruits of monstrous size grow, unlike most others, from the trunk and larger branches of the tree. The first grows often to an enormous size. In Java I have seen them so big that one was a complete load for a woman going to market. As this fruit is in season all the year through,—as it is very prolific, and, consequently, cheap,—and as the taste, though too strong to be agreeable to Europeans, is remarkably suited to the native palate, it is consumed in large quantity, probably in greater quantity than any other fruit, not even excepting the *Banana*. Containing a large quantity of saccharine and glutinous matter, the Jack is highly nutritious. Rumphius suspects that it is not an indigenous product of the Indian islands, but that it was brought from the continent of India by stranger merchants. * The name by which it is known in the languages of the Archipelago is *Nangka*, a probable enough corruption of the Telinga word *Jaka*. †

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* "Fructus his frequentius accrescit in septentrionalibus Indiæ partibus quam in orientalibus, qui sine dubio per mercatores huc delatus est, quod probabile videtur, quum nullum gerat nomen indigenum."—Tom. I. p. 105.

† In the Macassar language it is called *Răpu-chidi*, but this is only an epithet meaning "The rough fruit."

The *Chămpădak* is a much smaller fruit than the common Jack, more slender in its form, and of a more oblong shape. The fruit is of a more delicate flavour, sweeter, and is, to a small degree, of a farinaceous consistence. By the natives it is much more esteemed than the Jack, and bears a much higher price. If the true Jack be a foreign plant, the *Chămpădak* is strictly an indigenous production, and is unknown beyond the limits of the Indian Archipelago. In the Malay language it is called *Chămpădak*, in the Ternati *Towada*, and in the Amboynese *Anahan*. It does not thrive in the close shady gardens which surround the Indian villages, and requires sunny, solitary situations.

The *Mango (Mangifera Indica)* is cultivated in the islands as in other parts of India, but perhaps not so frequently as in the southern parts of the peninsula of Hindustan. There are a great many varieties of the cultivated Mango, but *five* more frequent than the rest. The common Mango is also found in the wild state, in which there are two varieties, besides a distinct species, the fetid Mango.

The Mango of the Indian islands, when cultivated with care, attains great perfection, and is of exquisite flavour. Some raised in the gardens of the Sultan of Java, particularly of the variety called *Dodol* by the Javanese, I found superior to any I had ever eaten in the Bengal provinces, and, I am told, are not inferior to those of Malabar,

where the fruit is thought to attain the highest perfection.

The wild Mango exists in all the Indian islands, but I strongly suspect that the culture of this fruit was introduced from the continent of India in comparatively recent times. The name of the wild and cultivated kind is very generally different, and where it is so, the name of the latter, always the same, happens to be the corruption of a Sanskrit word, through the medium of the vernacular language of Telinga. We may trace it through many corruptions. In Sanskrit it is *Mahapăhla*, which means "the great fruit." In the Telinga, by the change usually made in that language, it becomes *Mahampălăm*, which is slightly changed in Malay, the language of commercial intercourse, and that naturally which first received it, into *Măm-plăm*. In the Banda language it is corrupted into *Maenpalan*. The Lampungs make it *Kăpălam*, and the Javanese, abbreviating the Malay word, gives us only the last syllable, or *Pălăm*. The cultivated *Mango* was unknown in Amboyna, Banda, and all the rest of the spice islands, until introduced by the Dutch as late as the year 1655. The people of Banda then gave it the Telinga name, but the other tribes the name of the wild plant, now affixing the adjunct *Utan*, or *forest*, to the latter. Some of the western tribes followed the same course, applying the name of the wild to the

cultivated kind. It is remarkable that the Malay word *Mangga*, which has passed into the European languages, has no currency among the more genuine Malays, but appears to have been *picked up* by our traders at Bantam, or on the west coast of Sumatra. I imagine it to be the name of the wild Mango in Malay, preserved by some of the tribes of that people even after the introduction of the domestic kind. In the Bali language the wild Mango is called *Poh*, in Macassar *Taipa*, in Ternati *Koawe*, in Tidor *Kwale*, and in Amboyna *We-we*.

The *Fetid Mango* differs so much in character from the common Mango, that it never occurs to the natives to class them together. It is an object of culture, and, although offensive, and almost disgusting to Europeans, relished by the natives. In each language it is known by a distinct name, pointing out that it is indigenous and frequent. In Malay it is called *Bachang*, in Javanese *Kweni*, in the Balinese *Batel*, and in the Menado language *Dodeko*.

The *orange* and *lemon tribe* is widely spread over the Indian islands. Some species are indigenous and others exotic. The culture of the best kinds seems to have been introduced by foreigners. The whole tribe is distinguished by a generic name, and the species or variety described by affixing an adjunct. In Javanese and others of the western dialects this generic term is *Jăruk*;

in the eastern dialects it is *Usi.* It is remarkable that, in the Malay, the languages of Celebes and other dialects, the European name *Eimao* is frequently substituted. This points out how much the Portuguese must have contributed towards propagating these fruits.

The Indian islands are the native country of the *Pumplenoos* or *Shaddock*, (*Citrus decumanus.*) Here it grows in the greatest perfection, and when cultivated with care, as at Batavia, it is an exquisite fruit, and perhaps continues to please the European palate longer than any other. The *pumplenoos* was carried from the Indian islands to Bengal since the establishment of Batavia, and probably by the Dutch, as its name there, *Batavi Nimbu*, or the Batavian lime, distinctly points out. It was carried from these countries to our West Indian islands by the master of a trading vessel, called Shaddock, whose name it continues to bear.

The *Citron* is, I believe, an indigenous tree in Java and other parts of the Archipelago, but is very little esteemed. The *Lime* exists in vast abundance, and yields fruit throughout the year. I think the true *lemon*, however, is no where cultivated. Many varieties of *orange* are cultivated, but the *bitter* one is not among the number. A large variety, with a green rind adhering closely to the pulp, the cloves of which are difficultly sepa-

rated, is grown on the hot plains, and is indigenous. The best sort, however, is an exotic, having been introduced either from China or Japan. In the languages of Celebes it is hence called *Lemo Songaléa*, or the Chinese, and in the Malay occasionally *Limao Japun*, or the Japanese orange. The cloves in this are loosely attached to each other, and the rind still more loosely to the pulp. The latter is of a bright yellow colour, and full of essential oil. The native of a more temperate climate than that of the Indian islands, it requires the cold of elevated tracts, and when cultivated, as it is in Java, at an elevation of four and five thousand feet above the level of the sea, attains great perfection. This is the same variety which is cultivated in upper Hindustan, and the produce of Java is equal to the finest of the gardens of Delhi and Agra.

The *Pine-apple* (*Bromelia ananas*) grows in great luxuriance, and with little care, in the Indian islands; yet it is fully equal in flavour, and generally from twice to three times the size of those raised in our hot-houses. It is not much esteemed by the natives, and Europeans very soon tire of it, so that it is not often produced at their tables, unless by way of decoration. Pine-apples are in season throughout the year, and such is their abundance, that a good pine seldom costs more than twopence.

There can be little doubt but the *ananas* was in-

troduced by the Portuguese from America, and that it is not indigenous in the Indian islands, though the climate is so perfectly congenial to it, that in many situations it is now found in great quantities in the wild state. The name by which, with one or two exceptions, and with some slight modifications of sound, it is known, is the American one, (*Ananas.*) In the Macassar and Bugis language it is called *Pandang*, from the great resemblance of the plant to the *Pandanus.* In one of the dialects of Amboyna, that of Hitoe, the pine-apple is termed *Usi Bangala* or *Mangala*, which Rumphius tells us means the "orange of Bengal." This would seem to imply that the pine-apple had come to the Moluccas through Europeans from Bengal, which is improbable. Possibly the word *Mangala*, here used is a Sanskrit word, naturalized in some of the Polynesian dialects, which means excellent or superlative. We know that the pine-apple was introduced into Bengal, or at least into upper Hindustan, in the reign of the Emperor Akbar, by some Portuguese priests who brought the seeds from Malacca.* As early as 1594, it was cultivated in China, to which it was brought from the western shore of America through the Philippines.

Of the *Jambu* (*Eugenia*) there are a great many varieties, most of which, in the western parts

* Turner's Embassy to Tibet, Chap. I. and Ayeen Akbari.

of the Archipelago, at least, are found wild and are indigenous. They are all tasteless and insipid fruits, with the exception of the *Jambu Kling*, which, from its name, appears to have been brought from the Coromandel coast. This resembles in shape a jargonelle pear, and is sometimes of a dark purple, but more frequently of a beautiful pink or light rose colour. In flavour it partakes of the rose. The substance is of a white colour, light, and somewhat spongy. The taste is delicate and agreeable, so that this fruit may be considered as one of the very best of the Archipelago. The genuine name *Jambu* is nearly universal in all the languages, and is probably the corruption of a Telinga word.

The *Guava* (*Psidium pomiferum*) now exists in great abundance in the Indian islands both in the wild and cultivated state. The cultivated varieties at least, appear certainly to have been introduced by Europeans, as they are no where to be found but in the vicinity of former or existing European settlements. Rumphius imagines that the guava was early introduced by the Spaniards from Peru through the Philippines. The people of Ternati, who, by such means, must have been the first to receive it, call it accordingly by a corruption of the European term *Guajawa*, to assimilate the sound with their own pronunciation. Some of the tribes class it with the *Anona* or custard apple, but more gene-

rally it is classed with the *Eugenia*, and is called by the different names of *Jambu kuning*, or the yellow *Jambu*, *Jambu biji*, or the seedy *Jambu*, and *Jambu Portugal*, or the Portuguese *Jambu*. The fruit, which is wonderfully cheap and abundant, is held in very little esteem.

The *Papaya* (*Carica papaja*) exists in great abundance throughout the Indian islands, and, like the *guava*, was introduced by the Spaniards or Portuguese. The terms by which it is known in the different languages always imply a foreign source. The most frequent is the Portuguese name *Papaya*. The people of Macassar, who probably received it intermediately from Java, call it *Unti Jawa*, or the Javanese *banana*, and the people of Bali *Gădang Castila*, or the Castilian *banana*. The *papaya*, in the Indian islands, is extremely prolific, and bears fruit the whole year round, growing luxuriantly in the most indifferent soils, and rapidly coming to maturity. The natives hold the fruit in no esteem. At Ternati they feed their hogs with it, and call it "pigs' meat." * As it contains a large quantity of saccharine matter, and a great volume of nutritious food, it will probably be generally applied, in a more advanced state of society, and of the science of husbandry, to the fattening of cattle.

* Rumphius, Vol. I. p. 143.

The *Custard-apple* of two varieties (*Anona squamosa et reticulata*) is very common. This is an exotic like the fruits just mentioned, and, like them, was introduced by the Spaniards or Portuguese from America. The name is either the American one *Anona*, abbreviated *Nona*; or, *Srikaya*, from the resemblance of the edible pulp to a native dainty of that name made of milk and eggs, in short, a custard, the same source from which our own name is derived. The Dutch call it "the Chinese pear," from believing it was first introduced into the Indian islands by the Chinese.

The true *Cashew* tree (*Anacardium Occidentale*) is another plant of the tropical regions of the new world, introduced by the Portuguese. A wild variety is said by Rumphius to be found in the Indian isles. The true kind is seldom found beyond the vicinity of European settlements. The Malays call it *Caju*, and the people of Amboyna *Buah Faringi*, "the European or Portuguese fruit." The harsh disagreeable fruit is hardly eaten, and the nut is in little request, because the country affords a great variety of edible kernels more convenient, abundant, and agreeable.

It may be remarked, that more of the fruits of America have been transplanted into the Indian islands than of those of the latter into America. This has happened from two very obvious causes; the first is, that the voyage from the western coast

of America to the Indian Archipelago is short and easy, the voyage back tedious and difficult; the second, still more effectual, is, that the fruits of the Indian islands are delicate, perishable, and difficultly propagated in foreign countries, those of America coarse, hardy, and fit for almost any soil. There is not one of the fruits of America, though they grow in luxuriance and perfection in the Indian islands, that are held in any esteem by either natives or foreigners. Even the pine-apple, as already noticed, is no exception.

The *Langseh*, *Rambeh*, and *Dukuh*, are indigenous fruits, and, indeed, I believe wholly unknown to all other countries. When of the best and fullest growth they are about the size of a pigeon's egg. The two first are oblong; the *dukuh* round. They all consist of a skinny covering of a dirty white colour, enclosing a number of cloves easily separated from each other. These cloves consist of a thick semitransparent pulp upon a large greenish kernel. The pulp is the edible part of the fruit, and is of an agreeable subacid taste. The *Dukuh* is a much superior fruit to the other two, and, indeed, next to the Mangustin and Durian, is considered by the natives the finest of their fruits. Europeans consider it the second in rank of all the indigenous fruits.

The *Rambutan* (*Nephelium lapaceum*) is an indigenous and peculiar fruit, about the size of a

pigeon's egg, consisting of a skinny red covering, covered with soft spines, which encloses one large kernel, enveloped in a small quantity of semi-transparent rich subacid pulp, the edible part of the fruit. It is not much esteemed. The name, in reference to the soft spines, is derived from the Malay word *Rambut*, hair, from whence I conclude that the tree is either an indigenous product of the country of the Malays, or was first cultivated there.

The *Pomegranate* (*Punica granitum*) is found in every civilized country of the Archipelago, but I believe only in its cultivated state. The tree is smaller than in more temperate climates, the fruit inferior, and, like that of Hindustan, little esteemed. The only good pomegranates which, indeed, I have ever met with are those brought into upper India by the caravans from eastern Persia. This fruit in all the languages of the Archipelago is called *Dălima*, from the numeral five, in reference to the five cells into which it is divided. As a proof of the accuracy of this etymology, I may observe, that the word is literally translated into the Javanese language of ceremony, where it is called *Gangsalan*.

The *Tamarind*, (*Tamarindus Indica*,) one of the largest and most beautiful of trees, grows luxuriantly in most of the Indian islands, and appears to be a native production. It is cultivated as well

for its fruit as for the shade it affords, and in Java is the principal ornamental tree in avenues. To attain perfection in its growth a good soil is necessary, and as the fruit continues a tedious and unusual time on the tree, it is also necessary to its perfection that its fructification should take place at such time as to avoid the periodical rains, which would rot it on the tree. In the Moluccas and other countries of the Archipelago this happens, and the fruit, therefore, never comes to maturity. The soil and climate of Java bring the fruit to the greatest perfection, and from that island it is an article of export to the other countries of the Archipelago as well as abroad. Hence the tree and fruit are called in the Malay language *Asam Jawa*, or the Javanese acid. The tree, however, is indigenous in most of the islands, and known in each language by a distinct native term. In the Javanese it is called *Kamal*, in the Sunda *Champahu*, in the Banda *Tamalaki*. The word *Asăm*, common to most of the languages as a synonime, is an epithet of the languages of the western islands, meaning *sour*, from the tamarind being the acid in universal use for almost every culinary and medicinal purpose.

The *Calabash*, the *Gourd*, the *Pumpkin*, the *Musk-melon*, the *Water-melon*, and a variety of *Cucumbers*, are cultivated in the Archipelago. The calabash, as its name *Calabasa* imports, was intro-

duced by the Portuguese. The Pumpkin was also introduced by the same people, for it is called *Labu Faringi*, or the European gourd. The *Water-melon* (*Cucurbita citrullus*) appears to be an indigenous product of the Indian islands, though one not very abundant or generally diffused. It is very commonly known by the name of *Sămangka*. The fruit is neither so abundant, so large, nor so well flavoured, as that which I have seen on the arid banks of the Ganges, the Jumnah, and other rivers in upper India. The musk-melon, introduced by the Portuguese, seems little suited to the climate, at least to that of the hot plains, and is of very bad flavour. It can hardly be said to be yet naturalized.

The *cucumber* is an indigenous plant, and, as already mentioned in another place, is extensively cultivated. It is consumed rather as an esculent vegetable than as a fruit. It is sometimes boiled, but more frequently eaten raw from the hand, with a little salt. It is more mild and less watery than the varieties cultivated in Europe, and may be eaten in large quantity without prejudice. The different varieties are distinguished by different names, but the *generic* name in all the languages is *Timun*, thus affording another example of the prevalence of one term for a plant of extensive culture, but rare occurrence in a state of nature.

I have in this sketch given an account of the

principal fruits. A great many of minor importance remain unnoticed, which it would be foreign to this work to describe.

The fruits of colder countries have been introduced into the Indian islands, where, as they have received little care or attention, and have not always been cultivated in the climate of elevated tracts suited to them, they have seldom thriven. The grape was probably introduced by the Arabs, as its name, *ăngur*, implies. It is cultivated in the plains, but is seldom of a good quality. In some of the elevated tracts of Java, it might certainly be raised in perfection. The culture of the pear, the apple, and the peach, still less suited to the climate, has been still more unsuccessful. In 1813, my friend, Colonel Archibald Campbell, brought the strawberry from Bengal, which has since been cultivated with much success in the mountainous regions.

The Indian islanders are passionately fond of *flowers*, a taste easily gratified in a country which abounds in indigenous plants affording them. Women are never considered to be fully dressed without a profusion of flowers, and men also often wear them. In the native writings we find constant allusion made to them, and they are sculptured on the walls of all their ancient temples in a profusion which displays the national taste for them. In the Javanese language a *flower* expresses what-

ever is most beautiful. It is a synonime for a beautiful woman, and the common, almost the only, term for poetry.—A considerable number of the flowers which are cultivated, are the production of shrubs or still humbler plants, but in opposition to what obtains in northern countries, it may be observed, that a great number, also, are the produce of large trees. The prevailing colours are yellow, and especially red. Blue, so frequent in temperate climates, is seldom met with. The perfume of such flowers as the Indian islanders are partial to, is so heavy and powerful, as to be oppressive to the senses of a native of colder regions. They, on the other hand, have no taste for the lighter and more elegant odours which we prize, as, for example, that of the rose.

The flower-giving plants or trees, which are most frequently cultivated for the market, are the *Chămpaka*, (*Michelia champaka*,) the *Mălor* or *Mălati*, (*Nyctanthus*,) and the *Tanjung*, (*Mnusops elengi*.) The first and last are trees grown in gardens. The *Mălati* is a shrub yielding a small white flower. In Java it is cultivated extensively as an object of commerce in the vicinity of large towns. The *Chămpaka* is one of the few plants introduced by the Hindus, as its name, which is pure Sanskrit, implies. Water lilies or lotoses (*Nymphæa nelumbo*) abound in all the standing waters, and are particularly frequent in Java. The

attention paid to them in former times, on account of their being consecrated in the Hindu mythology, is shown by the number of Sanskrit synonimes applied to them.

The *Kămboja*, called in Java *Sămboja*, (*Plumeria obtusa*,) is cultivated in burying grounds, where, from its peculiarity of appearance, it produces a very solemn effect. It grows in a stunted irregular manner, so that, as Mr Marsden observes, it has even when young a venerable antique appearance. The tree has a dark-coloured leaf, and the flower is a large one, white without and yellow within, emitting a strong but not unpleasant odour.

The *Sulasi* or Hindu tulsi (*Ocimum*) is a plant with a peculiar strong aromatic odour, cultivated for the express purpose of being used for strewing on graves at the annual festival in honour of ancestors.

European flowers in the Indian islands lose their perfume and dwindle. The rose has but a faint smell though a pleasant one, and is not half the size of the common varieties among us.

CHAPTER IV.

HUSBANDRY OF THE MATERIALS OF NATIVE MANUFACTURES AND ARTS.

Husbandry of cotton.—History of the plant.—The Rami, *a species of* Urtica.—*Other plants affording filaceous bark.—The Lontar, or tar palm.—The Găbang, a species of palm affording materials for cordage.—The Rattan.—The Salak, a variety of it yielding an edible fruit.—The Bamboo.—The Nibung, a species of palm, the wood of which is used in house-building.—The Nipah, a species of palm, which supplies the thatch used by the maritime tribes.—Useful woods.—The Teak.—Its physical and geographical distribution.—Parallel between it and the oak.—The Lingoa.—Inferior woods.—Fancy woods for cabinet work.—Gums.—Damar, or rosin.—Caout-chouc.—Tallow tree—Wax tree.—Soap tree.—Dyeing drugs.—Indigo.—Its history.—Kasumba.—Turmeric.—Sappan wood.—Morinda.—Logwood.—Medicinal plants.—The Cubeb pepper.—Datura.—The Kămadu leaf.—The Upas, or poison tree.*

By far the most important of the subjects of this chapter is the cotton plant, next to rice, indeed, the most valuable article of the agriculture of the Indian islanders. Two species of cotton are known

in the Indian islands, the shrub cotton, *(Gossypium herbaceum,)* and the tree cotton, *(Gossypium arboreum.)* Of the first there are a great many varieties, distinguished by being annual or perennial,—by the texture of the wool,—its proportion to the seed,—or its colour. In each island, we generally find a peculiar variety. Thus we have the cotton of Butung, which is the finest of all, the cottons of different kingdoms of Celebes, of Timur, of Mangarai, of Lombok, of Bali, and of Java. It is remarkable that the cotton of the last island, though the most fertile and improved country, is the coarsest and least valuable. A superior variety is occasionally grown, however, in this last island introduced of late years, as may be discovered from the words *Mori*, or Moorish, *Holanda*, Dutch, and *Angres*, or English, applied to it. This, however, being a delicate plant, is not reared without difficulty. The shrub cotton is the chief object of culture, and the tree cotton is only occasionally grown in gardens, and near houses, for the shade it affords, or for the use of its leaves as an esculent vegetable, rather than for its wool.

The common cotton of Java is either grown in upland soils, or as a green crop in the dry season, in succession to rice. When grown in the latter way, it yields one crop, and then the plant perishes from the submersion it undergoes during the rains. When grown in dry lands, it becomes pe-

rennial, continuing to bear for two, three, or four years, and becoming each year less prolific. When cultivated in wet lands in succession to rice, the plant is sown in the end of June, and reaped in the beginning of November. This description of husbandry is confined to Java, the plant every where else being reared in upland soils.

The great inconvenience of the varieties of cotton grown in the Indian islands arises from the quantity of seed they contain, and the obstinacy with which the wool adheres to it. The seed in the common cotton of Java is in the proportion of the wool as four is to one. In some of the better varieties, this proportion does not exceed three to one. The cultivation of varieties of cotton with black seed, from which the wool could easily be disengaged, would be one of the greatest improvements in the rearing of this valuable commodity. At present, the cotton is separated by a small machine, consisting of two wooden rollers moving in opposite directions, through the imperfection of which the charge of freeing the wool from the seed is enormous, the labour of one person being adequate to the cleaning of no more than a pound and quarter of cotton per day.

I am not aware that it is ascertained whether the cotton plant be an exotic, or the produce of these islands. In the language of Amboyna it is called *Aha*, and in that of Banda *Karamboa*, both

of which appear to be native terms, from which it might be inferred, that the plant is indigenous. More of these languages, however, should be compared before this point is considered as decided. In the languages of the western portion of the Archipelago, from Macassar to Sumatra, both inclusive, the plant is universally known by the Hindu name *Kapas*. We may fairly conclude, from this fact, that whether the plant be indigenous or not, the culture of it must have been taught by the Hindus, and I imagine, unlike the introduction of other plants, that that of cotton happened at that early period, in which the Indian islanders received their religion from India.

The Indian islands produce a great number of plants, yielding a filaceous bark, which affords materials for cordage. I shall give a sketch of a few of the principal. The *Rami (Ramium majus*, Rumph.) is a species of *Urtica*, or nettle, growing to the height of five or six feet. This plant is every where an object of culture, for, from the bark of the stem is obtained the material of an excellent cordage, used by the Indian islanders for almost every purpose for which we use hemp, but particularly for the manufacture of fishing-nets. It is very generally recognized by one name *(Rami)* throughout the Archipelago.

Ganja, or hemp, *(Cannabis Sativa,)* is cultivated in every part of the Indian islands in small

quantities, not, however, for the manufacture of cordage, but for the use of its juices as a narcotic. The people of India, as its name proclaims, introduced this plant.

The *Bagu, (Gnetum gnemon,)* and the *Waru, (Hibiscus tiliaceus,)* are trees the bark of which, after pounding or maceration, afford a filaceous material converted into ropes, manufactured into fishing-nets, or occasionally into coarse bags.

The *Glugo (Morus papyrifera)* is extensively cultivated in some provinces of Java for the manufacture of paper. This paper is but unskilfully manufactured, being of a dirty brown colour, and in its texture uneven. It is more liable to the attack of the *Termes*, and other insects, than either our paper or that of the Chinese. If the paper of the manuscript which I discovered in the kingdom of Cheribon be of domestic manufacture, and made from the *Glugo*, the Javanese must have once possessed the art of manufacturing paper in greater perfection than at present, for it is in colour and texture far superior to any thing at present to be seen.

The *Lontar, (Borassus flabellifer,)* the *Tar*, or *Tal* of Western India, grows abundantly in the Indian islands, and is principally cultivated for its palm wine, which is chiefly used for the manufacture of sugar. The wood of the tree is dark, hard, and tough, and may be put to many useful purposes. It was upon the leaves of this palm

that the Indian islanders principally wrote before the use of paper became common from communication with strangers. The leaf is for this purpose cut into slips, about three inches broad, and from twelve to eighteen inches long. These, after being scratched upon with an iron stile, are filed together as a book, by passing a cord through them at both extremities. It is probable that the Indian islanders were taught to write on the leaves of the palm by the Hindus. The palm is known, as we might expect to find, with a tree that is indigenous, and very widely spread by a variety of native names. In Java it is called *Suwalen*, in Timur, and some of the neighbouring islands, *Koli*. Among the tribes that wrote, or now write, upon its leaf, the Sanskrit name has made encroachment on the native one. The people of Celebes call the tree *Tala*, which is the true Hindu name. The Javanese apply the compound native and Sanskrit word *Rontal*, meaning leaf of the *Tal*, to the leaf of this palm, as it is used for writing upon. In common language, this last word, by a transposition of the initial and final letters, becomes *Lontar*, which corruption, it is singular enough, has been borrowed by the Malays, and applied, not to the leaf, but to the whole tree.

In describing the Coconut palm, and Sagwire, the *Coyr* and *Gomuti*, those valuable materials of cordage have already been noticed. The *Gă-*

bang (Corypha, L.) is another palm, from the mid-rib of the leaves or rather branches of which an useful cordage is obtained by pounding and beating the dried stalk. This palm, which has been sometimes called the wild *Lontar*, yields a pith, which affords, like the *Gomuti*, or *Sagwire*, a *farina* resembling the true *Sago*, but of inferior quality.

The *Rattan (Calamus Rotang*, L.) may be considered as one of the most useful of the indigenous plants of the Indian islands. In domestic and rural economy, the Rattan is constantly used for the purposes of ligature and cordage. There are a great many varieties, from the size of a goose-quill to that of several inches in diameter. The Rattan is well known to be a prickly bush, sending forth shoots of amazing length, which form the useful part of the plant. The common Rattans yield a small insipid fruit, occasionally prepared as a sweetmeat. A variety of it, called the *Salak*, affords a fruit about the size of a pullet's egg, which consists of a hard stone, enveloped by a firm white pulp, which is covered by thin husks, in colour not unlike the back of an adder. This fruit has a strong odour, a mealy and acid flavour, and is much considered by the natives, who cultivate it extensively in their gardens. No other variety of the Rattan is cultivated, for the forests afford an abundant supply, whether for domestic use or exporta-

tion. The forests of Borneo and Sumatra, and of some parts of Celebes, afford the best and most abundant supply. The Rattans of Java are fewer in quantity, and inferior in quality.—The plant exists in the Indian islands wherever there are forests, and has generally in each language a distinct name. The Malays call it *Rotan*, not *Rotang*, as it has been improperly written. This is the word which has become naturalized in the European languages. The Javanese call it *Pănjalin*, the Sundas *Kwoe*, the Bugis *Raokang*, and the people of Ternati *Uri*.

Of *Canes* a great variety is found in the Indian islands. The most remarkable are the *Bamboos*, *(Arundo bambos,)* which are found every where in the wild and cultivated state. Some are cultivated for their beauty, and others for their utility. When they grow to perfection, forty or fifty feet is a common height; occasionally they are found as quickset hedges round the villages, and at others they are planted in clumps, perpetuating themselves by fresh shoots, without requiring to be renewed. To enumerate the different uses of the Bamboo would be to touch upon almost every important operation connected with the domestic or rural economy of the people, their naval architecture, and their modes of conducting wars. They put the bamboo to every purpose to which we apply ordinary woods, and use it besides as temporary

ropes and ligatures. The young shoots are with them a frequent, favourite, and agreeable esculent vegetable, and may be either boiled, or used with vinegar as a pickle.—The Bamboo is one of the indigenous plants which has a distinct name in each language, because it is of such common occurrence in the state of nature throughout, and of such obvious utility, that "the nations" had no need to be instructed in its application by one race civilized beyond the rest. The following are specimens of this diversity of name: Malay *Buluh*, Javanese *Preng*, Sunda *Awi* and *Tamiang*, Ternati *Tabatiko*, Amboynese *Ute*. The influence of the language of a more powerful tribe has now and then supplanted the native term in a minor language.

Among the palms which supply materials in the domestic economy of the natives, the *Nibung*, (*Caryota urens*,) and the *Nipah*, (*Cocos nypa*,) are of great value. The *nibung* is the true mountain cabbage. The stem, which is slender, tall, and perfectly straight, is used as posts in the architecture of houses, and especially in the construction of strong palings or fences. The outer portion of the wood is hard and strong, but the inner spongy, from which circumstance the tree may be excavated, and then forms useful gutters or channels for the transmission of water. The top of the tree, the germ of the future foliage, is like that of all the other palms, edible, and more delicate than that of

the rest. Some of the coarser parts of this top taste like a tender cabbage-stock, but other parts are so delicate and agreeable, as to bear a nearer likeness to a fresh filbert. The *Nibung* is found in almost all the countries of the Archipelago except Java. Found in sufficient abundance in the wild state, it is seldom cultivated. It has the following variety of names, *Nibung* in Malay, *Andudu* in Bali, *Palun* in Amboyna, *Walut* in Buru, and *Ramisa* in Macassar.

The *Nipah* is a low palm, the trunk of which never exceeds a man's height, and is sometimes even wanting altogether. It is the inhabitant of low marshy situations. Like other palms it yields a wine by the usual process, and in some parts of the Archipelago, particularly the Philippines, it is cultivated for this purpose. Its principal use, however, is for the leaf, usually called *Atap*, the common term for thatch among the Malays, specifically applied to the leaves of this palm, because among that people almost the only material used for that purpose. The *Nipah* leaf is also used for the fabrication of coarse mats. The small insipid pulpy kernels are sometimes preserved as a sweetmeat. This widely disseminated palm is called in the dialects of the more western tribes *Nipah*, in that of Ternati *Boho*, in one language of Amboyna *Parena*, in another *Bulain*.

No countries afford a greater variety or a great-

er abundance of excellent woods than the Indian islands. Among these the *Teak* or Indian *oak* (*Tectona grandis*) justly takes the lead. Of this wood there are several varieties. Like the oak it takes from eighty to a hundred years to come to maturity, and to do so even in that time a good soil is necessary. It will then often rise to a height of eighty feet, and has been known to attain a diameter of five, six, and even eight. The teak, in Java, blossoms in the dry season, and the fruit forms in November, immediately before the setting in of the heavy rains. It is one of the few trees which in these equinoctial regions sheds its leaves at once like those of temperate countries. With respect to the physical distribution of the teak, we find it both in the plains and mountains, though in the latter I think not above three or four thousand feet above the level of the sea. The wood of the mountain teak is hard but stunted in its growth; that of the plains less firm but larger. This is what has been observed with respect to the mahogany of the equinoctial regions of America. It grows in extensive forests, and when in a favourable soil, almost excludes every other tree. Its geographical distribution is comparatively limited. Java is the only country of the Archipelago in which it abounds. It is found in smaller quantity and of inferior size in the island of Madura, and in the islets to the east of it, in

Bali, Sambawa, and Butung, the last being its farthest limit to the east. In recent times it has been introduced into Celebes and Amboyna. The illustrious naturalist, Rumphius, introduced it into the latter from Madura in the year 1676. It is not indigenous in the Malayan peninsula, in Sumatra, or in Borneo. * In the least fertile parts of Java it either does not exist at all, or in small quantity, and of puny growth. The great forests of it in that island are in the rich central districts.—Wherever, within the Indian Archipelago, the teak tree is found or known, it invariably bears the same name, the Javanese word *Jati*, which word also means in that language, "true, real," or "genuine," but whether the adjective be derived from the noun, or the noun from the adjective, it is not very easy to determine. I should rather incline to think, that the adjective was the derivative. The word, at all events, is not a foreign one, but, I imagine, of the vernacular language of Java. From this circumstance, as well as the abundance and luxuriance of the tree in that island, I should incline to believe, that the teak is indigenous in

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* Of late years a few plants of teak were introduced into the Malayan state of Queda from Siam, and propagated with some success. By very recent accounts we are informed, that it has been discovered in the forests of Sumatra in the kingdom of Achin. It may be suspected, that the few trees found there are exotics.

those, and was spread from thence at unknown periods among some of the neighbouring islands. In quality the Java teak is considered inferior to that of Malabar, and superior to that of the Burman empire or Pegu.

It is a remarkable fact, that, among the innumerable variety of woods which exist in both worlds, from the arctic circle to the equator, two only, the oak and the teak, should, by their strength, durability, and abundance, be alone fit for the higher purposes of the arts, domestic and naval architecture, and the fabrication of great machinery. A short parallel between these two important woods may be useful and amusing. The geographical distribution of the oak has a wider limit than the teak. It exists in Europe, Asia, and America, to within ten degrees of the tropic. The teak exists in Asia only in the countries lying between China and Persia, within the tropics, being found only in the southern peninsula of India,—in India beyond the Ganges to the confines of China, and in the island of Java, with one or two others of *the great group*. In comparing the qualities of the two woods, those of the teak will be found considerably to preponderate. It is equally strong and somewhat more buoyant. Its durability is more uniform and decided, and to insure that durability it demands less care and preparation, for it may be put in use almost green

from the forest, without danger of dry or wet rot. It is fit to endure all climates and alternations of climate. The oak, on the contrary, cracks, and is destroyed by such alternations, and particularly by exposure to the rays of a tropical sun. The oak contains an acid which corrodes and destroys iron; the teak not only has no such acid, but even contains an essential oil which tends to preserve iron. The great superiority of the oak over the teak consists in its utility in the fabrication of vessels for holding liquids. The strong odour which the teak imparts to all liquids which are solvents of the essential oil in which that odour is contained, makes it unfit to be used for holding them. It makes good water-casks, but is unfit for holding wines, or any spirit, but arrack, to which it imparts some of that peculiar flavour which some persons affect to relish.

Next to the teak, the most valuable of all the woods of the Indian islands is the *Lingoa*, (*Pterocarpus draco.*) Of this tree there are, according to Rumphius, four varieties, chiefly distinguished by the colour or texture of the wood. The tree grows to an enormous size in the plains on a level with the sea, and at the valleys at the foot of mountains. It is principally a native of the eastern portions of the Archipelago, the land of spices, and is seldom found to the west. In the former, it is the substitute of the teak, and is used in domestic and

naval architecture, and in rural economy. It is also cultivated for its fragrant blossoms, which are much esteemed; even the wood of some varieties is so highly perfumed, as to be used as a substitute for sandal. It is far less strong and durable than the teak, but handsomer in appearance, and, therefore, fitter for cabinet work. It is the enormous excrescences growing from this tree which are called *Kayubuka*, and which are wrought into the inimitably beautiful cabinet work, which equals in lustre the finest variegated marble. In the Malay language the *Lingoa* is called *Angsana*, in the Ternati *Lingu*, in Macassar *Patene*, in Amboyna *Nala*. The Bugis, unable to discriminate between this wood and the sandal, call it *Chăndana*. In the Bima language it is called *Nara*, and in that of Timur *Sana* and *Na*.

Among the ordinary woods of those countries which, for economical uses, take the same rank as firs and ashes with us, may be mentioned the *Bitangor*, a species of *Uvaria*, vulgarly called by us *poon*, which is a corruption of *Pohun*, the common term for a tree in Malay,—the *Mărbao*, (*Netrosideros*, R.) the *Pinaga*; and, the *Suren*, which last is the *Toon* of Bengal. These trees are very common in those parts of the Archipelago where the teak does not exist.

Of fancy woods used in cabinet or fine work there are many. For larger cabinet work the *Sono* is the

most frequently used. It is a brown-coloured wood, some varieties of which are diversified by lighter coloured streaks. It takes a good polish. One variety is designated *Kling* or *Telinga*, but I can hardly believe it is an exotic. The wood of the *Jack* or *Nungka* is frequently used in cabinet work. It is of a yellow colour, of great size, durable, and takes a good polish.

The *Timaka* and *Kămuning*, two woods of close grain, which take an exquisite polish, are used, in what the natives attach so much importance to, the manufacture of *kris* handles. Particular pieces of the former occasionally assume a most singular appearance, being alternately of a white and black colour, strongly opposed to each other. These portions are called *Kayu-pelet*, or spotted wood, and are used in making *kris* and spear handles, beetel boxes, &c.

Ebony of several varieties is found in the Indian islands, but is of inferior quality to that of Mauritius and Madagascar. The best occurs in the eastern part of the Archipelago, viz. in Boeroe, Gelolo, the eastern coast of Celebes, and the western part of New Guinea. It is commonly called *Kayu-arang*, literally charcoal wood, but figuratively " black-wood." In Ternati and Tidor, however, it is called by the specific name of *Botolino*.

The forests of the Indian islands afford trees and

plants yielding *gums* or *resins* useful in the arts. The most important of these products is *Damar*, a kind of indurated pitch or turpentine, exuding spontaneously from several trees. In almost every country of the Indian islands there are trees which afford *damar*. Rumphius enumerates four varieties. These produce different sorts of the rosin, which take their names in commercial language from their colour or consistence. One is called *Damar-batu* in Malay, or *Damar-selo* in Javanese, which means the stony rosin, and another in common use *Damar-puteh*, or white rosin. The trees which produce the *damar* yield it in amazing quantity, and generally without the necessity of making incisions. It exudes through the bark, and is either found adhering to the trunk and branches in large lumps, or in masses on the ground, under the trees. As these often grow near the sea-side or on banks of rivers, the *damar* is frequently floated away and collected at distant places as a drift. The word *Damar* is in most of the languages of the western part of the Archipelago a common term for gum or resin. It has come to mean also a torch or link, that is, an object containing resin. The words gum and resin are expressed in some of the languages of the spice islands by the words *Salo* and *Kama*. *Damar* is used for all the purposes to which we apply pitch, but chiefly in paying the bottoms of

ships and vessels. It is exported in large quantities to the continent of India, especially to Bengal.

In different parts of the Indian islands are found vines or trailing plants, the milky juices of which become, when inspissated, a true *Caout-chouc*. The late Dr Roxburgh, in the 5th volume of the Transactions of the Asiatic Society, has rendered an account of the botanical character of one of these plants. The gum is sometimes used as a torch, and the Javanese, to soften the sound, wind a little of it round the mallet with which their musical instruments are struck. The plant which yields this peculiar substance in Java is called in the language of the country *Bendud*.

A tree, (*Bassia,*) affording a very singular production, a vegetable tallow, or concrete oil, is very frequent in the western countries of the Archipelago. From the short notices contained in Rumphius, * it appears to be a tall straight tree, of a smooth ash-coloured bark, having leaves resembling the *Kănari*. The nut also resembles that of the latter tree, but has no hard shell, but under the soft bark is found a hard medullary matter, of a harsh, bitter, and disagreeable taste. This nut, by boiling, affords the tallow, which is of a hard con-

* Herbar. Amboin.

sistence, and of a yellowish colour. When obtained, it is poured into bamboo joints, and thus offered for sale. The tree is called by the Malays *Kawan*, and by the Javanese *Nyatu*. It is certain that, in a more advanced state of the arts, this material, which is cheap and abundant, will become of great utility in countries where there is *naturally* a deficiency of animal fats and oils. It is not improbable, also, that, with more commercial intelligence and enterprise than can exist under the present restricted intercourse of Europeans with these countries, it might be exported to Europe, the manufactures of which create so great a demand for tallow and animal oils.

The fruit or nut of a shrub, called by the people of the western part of the Archipelago *Rarak*, (*Sapindus,*) is constantly used by the natives in lieu of soap. From the detergent virtues of this singular fruit, we may conclude, that it contains a large portion of some alkali in an uncombined form. These comparatively unimportant productions are mentioned as examples of the wonderful variety and extent of the useful vegetable products of these countries.

Of plants affording *colouring materials* applicable to the art of dyeing, there is a considerable number. Indigo (*Indigofera tinctoria*) is the most important and valuable. This plant exists wild in different countries of the Indian Archipe-

lago, and, from the variety of native names, we may conclude that it is indigenous. In Javanese, for example, it is called *Tom*, in Malay *Tarum*, and in Menadu *Entu*. In some countries, however, the local name is wanting, either from the plant being exotic, or the culture of it having been introduced by neighbours. The Sundas of Java call it by the Malayan name, the people of Bali and Ternati by the Javanese one. From the Sanskrit name of the plant among the Bugis and Macassars, we might be inclined to suspect that it had been introduced by the Hindus.—Though the name of the plant be constantly *native*, that of the prepared drug is as invariably *Indian*. There is no other for the coloured *Fecula* from one end of the Archipelago to another, than the Sanskrit one, *Nila*. From this fact, little doubt can be entertained but the Hindus instructed the natives of the Indian islands in the art of preparing a colouring matter from the Indigo plant.

Of the common Indigo plant, besides the wild kind, there are in Java, where the plant is best known, three cultivated varieties, the practical differences between which, as among the other great objects of husbandry, consist in the size of the plant, and the shorter or longer time it takes to come to maturity. Besides the common Indigo, there exists in the island of Sumatra another species, first brought to the notice of European botanists by Mr

Marsden, and hence called *Marsdenia tinctoria*. The Malays call it *Tarum Akar*. This plant, instead of being a shrub imperfectly ligneous, with small pinnated leaves, like the common indigo, is a vine, or climbing plant, with leaves from three to five inches in length. The Sumatrans use the two plants indifferently in the manufacture of the drug, but as the vine indigo is confined to this people, no opportunity has yet occurred of instituting an intelligent investigation into their relative merits.

Indigo, in Java, is either raised as a second crop after rice in low lands, or in upland soils, as the principal crop; in both cases, it is reared without the assistance of dressings of any sort. The variety raised, according to the first description of husbandry, is the smaller one, or that which takes the shortest time to come to maturity, and that, according to the second, the larger, or that which takes the longest time. It is remarkable, that, in the hot plains, the indigo plant seldom comes to seed, and that the little which it yields is of a bad kind. Though the plant, therefore, be cultivated in the plain for the purpose of manufacture, the seed is raised in elevated or hilly tracts, which proves, that, in its physical distribution, it is not an inhabitant of the climate of the plain, but of a more elevated region.—According to the practice of the natives of Java, indigo is sown about the middle of July, and the first crop is cut

in two months. The manufacturing season continues two months, and the plant is cut, in all, three times.

The native process of manufacturing is extremely rude. The stalks and leaves having lain for some days to macerate, are then boiled, and afterwards mixed with some quicklime, and fern leaves to fix the colour. In this semiliquid state it is applied to use, and large quantities of it are so exported by the Javanese to their ruder neighbours. The practice of manufacturing the pure *Fecula* into a solid mass is unknown to the natives. The Dutch colonists were in the habit of manufacturing small quantities of indigo of the finest quality, * but at an exorbitant cost. The more intelligent methods pursued by the English in Bengal, were introduced during the British occupation of the island, and are at present attended with a success which might be reasonably looked for in a country possessing,

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* Mr Gott of Leeds, distinguished, even among the great manufacturers of this country, for skill, liberality, and enterprise, has informed me, that a quantity of this Java indigo, purchased by him in the London market during the last war, was the best he had ever met with, not excepting the finest samples from Guatimala or Bengal. I believe a M. Petel, an ingenious French gentleman residing in Java, was the manufacturer of this remarkable drug. The process he pursues is peculiar, and, where advantageous, is judiciously followed at present by all the other European manufacturers.

in an eminent degree, the rich soil required for the growth of indigo, and the command of water, so necessary for the manufacture. Of all productions called colonial, indigo is the one which demands, in the manufacture, the largest share of intelligence and judgment. None of the Asiatic nations are equal to the manufacture of a perfect drug, fitted for the market of Europe. The Chinese, who can manufacture good sugar, cannot manufacture good indigo, which is the peculiar product of the skill and civilization of Europeans.

Besides indigo, a considerable number of inferior dyeing drugs are known to the Indian islanders. The *Kăsumba*, or *Safflower*, *(Carthamus tinctorius,)* is one of the most considerable of these. This is an indigenous plant of the Indian Archipelago, and is found throughout the whole of it. The culture of it seems to be most successfully prosecuted in the island of Bali, from whence it is an article of exportation to the neighbouring countries of the Archipelago. It grows also in considerable perfection in the territories of Macassar and *Turatea*, in Celebes, and in the state of *Bima* in Săмbawa. The colour which it yields is a saffron, for which its name indeed is the expression.

The *Arnotto* of America *(Bixa orellana)* is also known and cultivated by the Indian islanders. This plant, from the resemblance of the colouring

matter to that of the last, is also called *Kăsumba*, with the addition of *Kăling*, meaning Telinga or Indian, from which we may judge it to be an exotic, introduced from the Deccan, or southern peninsula of Hindustan.

Turmeric (Curcuma longa, L.) is every where cultivated in considerable quantity. Three varieties are enumerated by Rumphius, a wild, and two cultivated ones. It is an indigenous plant, and is every where known by a native name, which name is invariably borrowed from its yellow colour. In Javanese, Malay, and Bali, it is called *Kunyit*, in Amboynese *Unin*, and in Ternati *Gorachi*, which means "golden." Turmeric affords a beautiful, but a very perishable colour, and is less used as a dye than as an aromatic for seasoning food.

Several dyeing *woods* exist, and in great abundance. The *Sappan*, or Brazil wood, *(Cisalpina sappan,)* is common to every part of the Archipelago, but the production of *Luconia*, in the Philippines, and of the island *Sămbawa*, are preferred. The tree grows wild, but is also an object of cultivation. It exists in the greatest perfection in the kingdom of Siam, and in the little state of Champa depending upon it, from which last, as an early intercourse is known to have taken place between it and the Indian islands, we might suspect that the tree was imported. The frequent native terms by which it is designated lead

us, however, rather to consider it an indigenous product. In the Malay language it is called *Săpang*, from which *Sappan* is evidently corrupted: In Javanese it is called *Săchang*, in Ternati *Sumya*, in Tidori *Roro*, and in Amboynese *Lolan*. The Sappan wood imparts the best red dye which is known to the Indian islanders. It is exported to China and to Europe.

The *Mangkudu (Morinda)* is a tree of moderate size, found abundantly in every part of the Indian islands, the roots of which are extensively employed as a dye-stuff for giving a red colour. The *Mangkudu* is of two kinds, the small and large leaved, (*Morinda umbellata et citrifolia*,) the roots of the first of which only afford a dyeing material. The produce of the eastern islands is considered superior in quality, as a dyeing drug, to that of the western, and hence we find the *Mangkudu* of Amboyna an article of importation into Java. Wherever pepper and coffee are raised by the improved methods taught by Europeans, the *Mangkudu* of both varieties is used as props, or to afford shade to these exotic plants. In the languages of the western countries of the Archipelago, the tree is named according to the idiom of the pronunciation of the people *Mangkudu*, *Bangkudu*, or *Wangkudu*, the three initial consonants in these cases being commutable, and very arbitrarily used.

The *Ubar*, a species of red wood, resembling the

Hematoxylon, or logwood of Honduras, is abundant, and is the substance with which the natives tan and give a brown colour to their fishing-nets. It is a production of Sumatra.

The plants of the Indian islands afford none which are of established reputation in our *Materia Medica*, but many exist which produce powerful effects on the animal frame, and which may be found ultimately possessed of medicinal virtues. The virtues of the American plants were early ascertained from the residence of Europeans, and their intelligent inquiries, but of those of the Indian islands, we continue at this moment almost as ignorant as at our first acquaintance with these countries. The little that has been written by European writers is vague and unsatisfactory, and the ignorant and careless empiricism of the natives deserves to be wholly disregarded. Of the medical effects of the plants of the Indian islands, we can, indeed, hardly be said to know more than that some of them are powerfully narcotic, others cathartic, emetic, or diuretic, while some act most powerfully, in some cases almost fatally, when applied even to the external skin. Another class affords a most subtle poison when introduced into the circulation of the blood. Those of milder operation exist also, and some are found which are astringents, or bitters, or combine these qualities with an agreeable *aroma*.

I do not know that specific virtues in the cure of any disorder have ever been ascribed to any of the plants of the Indian islands, unless I except the recent and valuable discovery of the effects of the *Cubeb*, (*Piper cubeba*,) in the cure of *Gonorrhœa*. The *cubeb*, called in the Javanese language *Kumukus*, and in Malay *Lada bărekor*, or pepper with a tail or process, is, like the common black pepper, the production of a vine. It is a native of the island of Java, and grown there only. The *cubeb* has a very peculiar aromatic odour, and singular taste, without being very acrid. Taken in the dose of about three drachms, repeated six or eight times a-day, in the manner in which Peruvian bark, is exhibited, it stops, without producing any sensible effect on the constitution, the discharge of gonorrhœa, and all the inflammatory symptoms, in from twenty-four to seventy-two hours. If the medicine be interrupted on the first disappearance of the symptoms, they recur, and, therefore, it is necessary to persevere in its use for some days after the appearance of disease is gone. Taken in large quantity the *cubeb* proves mildly cathartic, and has in some instances been alleged to create swelled testicle. The use of this plant as a remedy in gonorrhœa was unknown to the natives of the Indian islands, or to the Europeans residing among them; and it is equally remarkable, that it *was*

known to the people of Bengal, from whom the English, by accident, learnt the use of it, while in the occupation of Java.

Among the narcotic plants, the most remarkable is the *Datura*, called by the Indian islanders *Kăchubong*. The fruit of this plant produces the most complete stupor, though its effects are not very lasting. Among the artifices practised by the knavery of the Chinese to circumvent the simple natives, the exhibition of the *Kăchubong* may be reckoned one. When chief of the districts of Samarang in 1815, I remember having met with a remarkable example of this. A Javanese boatman in his canoe, proceeding on his voyage on a river, was accosted by a Chinese from the bank requesting a passage, for which he tendered a fare and a share of his food. The Javanese received him, and eat heartily of the viands tendered to him by his passenger. These were mixed with the *Datura*, and immediately induced stupor and heavy sleep. When the victim of this piece of roguery awoke, he found himself lying stark naked in a forest fifteen miles distant from the place where he had taken in the Chinese,—robbed of his canoe, and all his property. The accusation was made in my presence with much *naiveté*, and the Chinese, after some hesitation, acknowledged all the facts.

Among the substances proving violently stimulant when applied to the external skin, the most

remarkable is the *Kămadu*, (*Urtica urens*,) the large broad leaf of a tree. A single touch of this terrible plant produces the most violent irritation, accompanied by excruciating pain, and even fever. It is the same which is used to irritate the buffalo in his contest with the tiger.

Of the plants of the Indian islands two at least afford a most subtle poison, either taken into the stomach or circulation, the *Anchar* and the *Chetik*. The word *Upas* in the Javanese, and some other languages of the western portion of the Archipelago, is not a specific term, but the common name for poison of any description whatever. The *Anchar*, the most common source of the vegetable poison in use, is one of the largest forest trees of the Archipelago, rising to the height of sixty and eighty feet, straight and large, before it sends out a single branch. It proves hurtful to no plant around it, and creepers and parasitical plants are found winding in abundance about it. The poison is in the outer bark, from which, when wounded, it flows in the form of a milk-white sap. In this state it is as deleterious as when, according to the practice of the natives, it is mixed with the juices of a quantity of extraneous aromatics, and other matters, such as black pepper, ginger, arum, galanga, &c. When applied to the external skin it produces intolerable pain and itching, with a kind of herpetic eruption. The inner bark resembles coarse

cloth, and is frequently worn as such by the poorer peasantry, and occasionally converted into strong rope. Great care must, however, be taken in preparing it, for if any particles of the poisonous juice remain adhering to it, when the cloth becomes moist, the wearer experiences intolerable itching.

The *Chetik* is a large creeping shrub, with a stem occasionally so big as to approach to the character of a tree. It thrives in black rich moulds. It is the bark of *the root* of this plant which affords the *upas* or poison, which is an extract of nearly the consistence of syrup, obtained by boiling it with water. The *Chetik* is a more intense poison than the *Anchar*, but, as far as we know, it is confined to Java. The *Anchar*, on the contrary, appears to exist in almost every country of the Archipelago, being found in the Malay peninsula, in Sumatra, in Borneo, in Bali, and in Celebes, as well as in Java. The Malays call this last *Ipoh*. Both are found only in the deepest recesses of the forest.

To produce the fullest effects, the *upas* poison, of either kind, must be recent and well preserved. Exposure to the air soon destroys its potency. Its effects depend on the strength of the animal, and the quantity taken. Three times the quantity taken into the circulation are necessary to produce the same effects taken into the stomach. The momentary application

of a small quantity to the blood does not prove fatal. It is necessary that the poison be inserted with a dart, and that the dart should continue in the wound to give time for its absorption. Thus applied, the poison of the *Anchar* in its recent state kills a mouse in ten minutes,—a cat in fifteen,—a dog within an hour,—and a buffalo, one of the largest of quadrupeds, in something more than two hours. The effects of the poison of the *Chetik* are far more violent and sudden. Fowls, which long resist the poison of the *Anchar*, die often in less than a minute from that of the *Chetik*. It kills a dog in six or seven minutes. The train of symptoms induced by the operation of these poisons, is said by Dr Horsfield, the author of all our accurate knowledge on this subject, to be essentially different. Probably they differ less in quality than in degree. The symptoms of the *Anchar* are restlessness, quick-breathing, increased flow of saliva, vomiting, alvine discharge, slight twitches, laborious breathing, violent agony, severe convulsions, and death. The *Chetik* acts more directly on the nervous system and brain, and, after a few primary symptoms, destroys life by one sudden effort.—The most barbarous of the Indian islanders, in their wars with Europeans and each other, as mentioned in other parts of this work, discharge arrows poisoned with the juice of the *Anchar*. These may, indeed,

produce an aggravated wound, and much debility, but I doubt whether the wound of a poisoned arrow has ever proved immediately fatal. The darts charged with it are not barbed, and, therefore, instantly removed from the wound, yet, to destroy the life of so comparatively weak an animal as a dog, takes an hour when the dart is continued in the wound and deliberately applied. Rumphius describes the Dutch soldiers as suffering severely from the effects of this poison in the wars conducted by them about the middle of the seventeenth century, at Amboyna and Macassar, until a remedy was discovered in the emetic qualities of the *Radix toxicaria* or *Bakung*. The assertion of the discovery of a *remedy* throws a doubt upon the whole, for it is surely altogether unreasonable to expect, that clearing the stomach by an emetic should prove an antidote to a subtle poison, taken into the circulation, and acting upon the nervous system.* The Dutch soldiers were probably more frightened than hurt. In the perfidy of the practice of using poisoned weapons, and the mysterious and secret operation of a poison, there is something to appal the stoutest heart, and abundant materials for terror and superstition. When our soldiers,

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* Dr Horsfield on the *upas* poison, in the *Transactions of the Bat. Society*, Vol. VII. *Rumphii Herb. Amb.* Tom. II. and VI.

both Indian and European, proceeded on an expedition to Bali in 1814, they expressed serious apprehension for the poisoned darts of the Balinese. The same fear was entertained by the same people for the *krises* of the Javanese, until we discovered that that people never poisoned their weapons, and that the kris was a very inoffensive, nay, very useless one. Such, unhappily for fiction, is the true account of the *upas* tree, the bark of which is used by the natives of the countries in which it grows as wearing apparel, and beneath the shade of which the husbandman may repose himself with as much security as under that of coco-palm or bamboo. Every thing we know of the true history of the *upas* tree proclaims the egregious mendacity of the man who propagated the fable respecting it, which has obtained currency in Europe, and the extraordinary credulity of those who listened to his extravagant fiction. *

* A Mon. Foersh, a French surgeon, was the inventor of the tale, and Dr Darwin, the most distinguished of those who believed and propagated it.—See "*Botanic Garden.*"

CHAPTER V.

HUSBANDRY OF ARTICLES CHIEFLY FOR FOREIGN EXPORTATION.

Sugar-Cane.—Culture.—History.—Manufacture of Sugar.—Of Arrack.—Black Pepper.—History.—Culture.—Fecundity.—Coffee.—Culture.—Fecundity.—The Clove.—Description.—Geographical Distribution.—Name.—History.—Culture.—Fecundity.—Nutmeg.—Description.—Geographical Distribution.—History and Name.—Culture.—Fecundity.—Forced culture of the Clove and Nutmeg explained.—Massoy.—Clove-bark.—Cayu-puti.—Cassia.—Cardamom.—Ginger.—Camphor.—Benzoin.—Lignum Aloes.—Sandal Wood.

The Indian islands produce a great variety of vegetable substances less in demand among the natives than foreigners. The bare mention of the names of black pepper, cloves, and nutmegs, not to particularize minor articles, is associated with some of the most interesting and important events both in the commercial and civil history of our species. In the commercial language of Europe, most of the articles which compose this chapter are known by the vague name of Colonial Productions.

This designation, however, independent of its inaccuracy, is a great deal too limited, for it is not in the markets of Europe alone that the productions of the Archipelago are in demand; they are also in request in every part of Asia, from Japan to the Hellespont.

I shall begin my account of this interesting subject with the husbandry of the Sugar-cane, *(Arundo saccharifera.)* There exist in the Indian islands several varieties of this production. Three may be considered as indigenous, and a fourth has been introduced by Europeans. The indigenous varieties are chiefly distinguished by the size and colour of the stem of the cane. One is of a pale yellow colour, having joints five inches long; a second is a small cane, not above an inch thick, of a greenish yellow colour; and the third, the most remarkable, has a brown or purple coloured stem, and is often two inches in diameter. The exotic variety is a cane introduced by the Dutch into Java from the West Indies in very late times. This is the kind principally used in the manufacture of sugar. The purple-coloured cane, because it tinges the sugar, is unfit for this purpose.

In Java sugar-cane, though it may, for the consumption of the natives, be cultivated in any season, is, for the manufacture of sugar, planted by slips in the months of July and August, and cut in those of May and June. Two *Ratoon*

crops (*Bungke*) are usually taken, and sometimes a third.—Sugar-cane is usually cultivated in dry arable lands of some little elevation, and never in the finest soils of the country, those fit for growing the great rice crop, so that the culture does not interfere with the immediate production of food. A rich dark loam yields cane which is most productive in sugar, and a soil in some measure sandy, and to a small degree of a gravelly nature, that which affords sugar of the whitest and best quality. In the western districts of Java, the Chinese apply the oil-cake, the refuse of the press, from the manufacture of oil from the ground pestachio, as manure, but in the more fertile eastern districts, no manure whatever is employed, but, after yielding three successive crops, it is then the practice, as land is plenty, to allow the ground a fallow for two seasons. In Java and the Philippines, where alone sugar is manufactured to any extent from the cane, the manufacture is solely in the hands of the Chinese. The process pursued is similar to that of the West Indies, which has been so frequently described, only that the machinery is ruder, and less expensive. The cylinders of the mill are of wood instead of iron, and the boilers of iron instead of copper. The latter are imported from China. The machinery is always moved by cattle, and never by water. The sugar of Java and Manilla is always clayed, and the manufacture of muscavado

is not practised. The size of the works may be estimated from the quantity of sugar manufactured by them, which is commonly from 950 cwts. to 2400 in five weeks, the usual duration of the manufacturing season.

The sugar-cane is certainly an indigenous production of the Indian islands, but to what particular spot it originally belonged has not been determined. I am not aware, that, any more than the valuable *cerealia*, it has yet been detected in its wild state. Like them, and all other useful plants, rendered abundant only by the industry of man, we find it in every language and dialect from Sumatra to New Guinea, and the Philippines, known by one name, which, with very slight variations, easily accounted for is *Tăbu*. Thisis a native term unknown, as far as our information extends, to any language, ancient or modern, beyond the pale of the Archipelago, and we can, therefore, from analogical reasoning, entertain no doubt but the sugar-cane is an indigenous product of these countries. Although the cane be a native of the Indian islands, the art of manufacturing sugar from it is certainly a foreign art, and appears to have been unknown to the natives in all periods of their history. There is no name for sugar in any dialect of the Indian islands but a foreign one, and this foreign one, *Gula*, is pure Sanskrit. We might conclude from this, that the Indian islanders acquired, in their early intercourse with the

Hindus, the knowledge of extracting sugar from the juice of the cane. This, however, I imagine, was not the case. When Europeans first became acquainted with the natives of these islands, they found them ignorant of the manufacture of sugar from the cane. The Hindu word *Gula* is, indeed, equally applied to palm sugar as to that of the cane. I therefore suppose, that the Hindus instructed the Indian islanders only in the simple process of manufacturing the former, and that the manufacture of the latter was introduced by the Chinese under the auspices chiefly of Europeans, and in times comparatively very recent. The natives of the country, indeed, to this day, are unacquainted with the art of extracting sugar from the cane, which they rear solely with the view of using it in its raw state, as a common esculent vegetable.—An English acre of cane in middling land, cultivated without manure, produces in Java 1285 lbs. avoirdupois of clayed sugar. The best lands will give an average of 1815 lbs. Rich cane juice yields 31$\frac{1}{4}$ per cent. of sugar, middling 25, and the worst 20$\frac{5}{6}$; or, on an average of all, 25 per cent.

The cost of manufacturing sugar, in a country where the land is so fertile, and food so cheap, is remarkably moderate. A sugar mill, along with a hundred and twenty pair of working buffaloes for the labours of the field and mill, and with agricultural implements, is thought to be worth 12,000 Spanish

dollars. This mill is equal to the manufacture of the produce of 198⅓ English acres, and will yield 2277 cwts. of clayed sugar. The cost of the sugar may be easily estimated from these *data*:

	Sp. Dollars.
Interest of capital at 10 per cent. on Spanish dollars 12,000, is -	1200
Rent of land, and land-tax, at $2\frac{75}{100}$ per acre while in cultivation, -	545
Calculated expence of culture and manufacture, - -	1355
Profit at 10 per cent. on capital and outlays, - -	1510
	4610
Deduct molasses sold to the natives of the country for the manufacture of sweetmeats, - -	400
	4210

By this estimate, which is on a liberal scale, it will be seen that good clayed sugar may be manufactured in Java at Spanish dollars $1\frac{85}{100}$ per cwt., or at the exchange of 4s. 6d., 8s. 4d. nearly. In the district* where this estimate has been made, the manufacture is carried to a great extent. The price of common rice, such as that used by the na-

* *Kudus* in the eastern provinces.

tives, is 41½ cents of a Spanish dollar, per 100 lbs. avoirdupois, and common day labour is rewarded at the rate of two dollars a month. The best working buffaloes, the strongest and finest cattle of the country, cost no more than ten Spanish dollars a pair. The profits which would accrue to the *Planter* from combining the manufacture of arrack are not estimated, for this is injudiciously made an object of monopoly.

Of the celebrated Batavian arrack, which so much excels all liquors of the same name, I shall now give a short account. It is made from a mixture of molasses, palm-wine, and rice, in the following proportions:

Molasses, - -	62 parts
Toddy, or palm-wine, -	3
Rice, - -	35
	100

100 parts of these materials yield 23½ parts of distilled proof arrack.

The process of manufacture is as follows: The rice is first boiled, and after cooling a quantity of yest is added to it, and it is pressed into baskets, in which condition it is placed over a tub, or tubs, for eight days, during which time a liquor flows abundantly from the mixture. At the end of that time, the liquor so distilled is taken out, and mixed

with the molasses and palm-wine, which had been previously combined. The mixture remains in a small vessel for one day only, when it is removed into large fermenting vats, in which it remains for seven. When, at the termination of this period, the process of fermentation is over, the liquor is finally removed into the stills, and, according to the number of distillations it undergoes, becomes arrack of the *first*, *second*, or *third* quality in commerce.

The manufacture of arrack is conducted separately from that of sugar, the arrack distillers usually purchasing their molasses from the sugar manufacturers at the rate of about a dollar and a half a *picul*, deliverable at the distillery. The best arrack is manufactured at the rate of seven Spanish dollars per *picul*, or $2\frac{75}{100}$ dollars per cubic foot.

It is not very easy to determine with whom originated the manufacture of this singular spirit. It is evident enough, from the nature of one of the materials, the molasses, that it is not a native manufacture. The name *Arak* is Arabic, but among the natives it is not confined to this particular modification, but applied generally to every kind of spirituous liquor.

A valuable and important product of the Indian islands is *Black Pepper*, (*Piper nigrum*, L.) Except the western portion of the peninsula of India, they are the only countries in the world that yield this remarkable product. The pepper vine is too

well known to demand a very particular description. It is a hardy plant, the leaves of which are of a dark green, heart-shaped and pointed. It inclines to twine round any neighbouring support, and then throws out fibres at each joint, by which it adheres. In this situation it will climb to the height of twenty-five feet. The branches are short, and brittle. From these appear the clusters of fruit resembling bunches of currants, but larger, more rigid, and harder, every grain adhering to the common stalk. The fruit is at first green, but as it ripens, becomes of a dark red; and grows finally black, and shrivelled, as we see it, as an article of commerce. With the irregularity which belongs to all fruit-bearing trees in the warm and humid regions near the equator, the season of fructification with the pepper vine is uncertain, and it generally yields two crops a year. With the first fall of the periodical rains, it usually begins to flower, and the largest crop is ready to be reaped about the conclusion of the wet season.—In the Indian islands there are enumerated three varieties of pepper, which, like the other material products of culture, are chiefly distinguished by the longer or shorter time they take to come to maturity, and to live,—and by the greater or smaller amount of their produce.

The pepper vine, notwithstanding the luxuriance with which it grows in the Indian islands, does not appear to be an indigenous product. I conclude that

it was introduced by the Hindus in early times from Malabar, the only other country in the world which produces it. The arguments for this opinion are as follow. In Malabar it is found abundantly in its wild state in all the forests, but, on the other hand, it is no where found wild in the Archipelago.—The produce of Malabar is of higher flavour and value than that of the Indian islands.—There is no specific native term for pepper in any of the languages of the Archipelago.—Those which appear so, as the terms in the Malay and Madurese languages are, in fact, the common terms for the whole genus, and strictly require some adjunct to complete the sense.—*Măricha*, the only specific name in use, and which is current with the Javanese, the Balinese, and people of Celebes, is pure Sanskrit.* In corroboration of these arguments, we may further remark, that the pepper vine is only cultivated in those parts of the Archipelago which lie nearest to the continent of India,—that it diminishes as we recede from it,—and that, where the distance becomes considerable, it disappears altogether.

The culture of pepper is simple and certain. Of all products known to us under the name of *colonial*, it is that which, in climates congenial to it,

* It is remarkable enough, that this word, in the original language, is the generic term.

grows in the most indifferent soils. Indigo, sugar-cane, tobacco, and even cotton and coffee, demand soils of high fertility, but pepper flourishes in comparatively indifferent ones, nay, indeed, appears to attain the highest perfection in such. Those countries of the Archipelago, therefore, we may remark, which are *not noted* for the production of the articles above enumerated, and for that of rice, are those in which pepper comes to the greatest perfection, such as the south-west coast of Sumatra, the north coast of Borneo, and the eastern coast of the Malayan peninsula. Java, so famous for the fertility of its soil, produces the worst pepper of the Archipelago.* The pepper vine, in its native country, is an inhabitant of the mountains, and in the Indian Archipelago, we find it cultivated only in dry upland soils, and never in the rich hot loams fitted for the growth of marsh rice.

Either in its wild or cultivated state, when the vine is suffered to creep on the ground, the fibres which, when it is trained, adhere to the prop, strike into the ground, and become roots, and in this situation it never bears fruit. To enable it to do so, it must be trained upon some tree or pole.

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* The pepper vine flourishes in those countries of the Archipelago, the mountains of which are *primary* rock, and is of inferior quality, or unknown, where the geological formation is *secondary*.

A variety of trees are used for this purpose in different countries. In Malabar the Mango, the Jack, and *Erythrina*, are in use. Among the Indian islands, the vegetating props are sometimes poles of dead timber, as used in the culture of hops, and the vines are occasionally supported by the Areca, and even the Coconut palm. Where, however, the culture is pursued by, or on account of, Europeans, the business is conducted more systematically. The gardens are laid out into regular squares, and the only props used in these are the *Dădap (Erythrina corallodendron)* and the *Mangkudu, (Morinda citrifolia.)* The land chosen for a pepper garden is a piece of forest land similar to that from which, after the felling and burning of the timber, a fugitive crop of mountain rice is taken, as described in another chapter of this book. After the ground is broken, and prepared, the vegetating props are planted at regular distances, by cuttings usually two feet in length. The distance between each, in Penang, according to the improved practice of the Chinese, is seven feet and a half, but the native planters of Bencoolen place them as near as six feet. Six months after the planting of the vegetating props, the vines are planted. This is done by cuttings or slips of the vine from the horizontal shoots that run along the ground at the foot of the old vines. A singular operation, considered to be equivalent to transplanting, is inva-

riably performed on the young vines; this is called "laying down," and consists in detaching the vine from its prop, and burying it at the foot of the prop, in a circular pit, eighteen inches in diameter, leaving no more above ground than the top, which is fixed to the prop. At Penang, this operation is performed in the eleventh or twelfth month, but at Bencoolen, not until the second or third year, on the first appearance of fructification. After this operation, which is always performed in the wet season, the plant shoots up along the prop with redoubled rapidity.

There is considerable variety in the period of the vines first bearing fruit, and in the whole duration of its bearing. It usually, however, yields fruit in the third year, is in full bearing in the fifth,—and continues stationary for eight or nine years. After its fourteenth year, it begins to decline, and is not worth attending to after the twentieth, though it will live to the thirtieth. In a rich soil, and a warm temperature, the progress of maturity and decay are most rapid. In poor soils, and colder climates, the contrary effects will take place.

There are, as already mentioned, two crops, which, in point of time, are, extremely irregular, and in some situations run into each other in such a manner, that the reaping is pursued nearly throughout the year. In reaping the pepper

harvest, the reaper nips off the *Amanta*, or clusters, when the first berries of each cluster appear red, though the rest be still green. The clusters are thrown into baskets, where they remain for a day. They are then spread on mats, and trodden with the feet, to detach the fruit from the stalks. After this the pepper is winnowed to separate it from dust, and broken grains. This, with exsiccation in the heat of the sun, is the whole process of preparing this hardy product. White pepper, as is now well enough known, is black pepper blanched. The process of blanching consists in the simple immersion of the grains, choosing the ripest and best, for eight or ten days in water, a running stream, if procurable, being preferred for this purpose.

The fecundity of the pepper vine has been ascertained with considerable accuracy, in consequence of the large share which Europeans have had in the culture. According to the careless husbandry of Bencoolen, occasioned by the injudicious principles of forced culture, the average product of pepper vines of all ages, and reckoning upon the inequalities of soil and season, is somewhat under $6\frac{1}{2}$ ounces avoirdupois per vine.

With the free enterprise of Europeans, and the skill and economy of the Chinese cultivator, the average produce of pepper vines at Penang is not less, under the same circumstances, than a pound

and a half, which is at the rate of 1161 lbs. per acre. In Malabar the produce of a single vine cannot be estimated higher than $7\frac{1}{5}$ ounces avoirdupois, * and supposing the vines to be planted in the same manner, and at the same distances, as at Penang, the produce of an acre in that country would be no more than 348 lbs. In the Indian islands the culture is simple. The plant requires little watering, and no manure. In Malabar the culture is both complex, slovenly, and precarious, and frequent watering and manuring are requisite. We are not surprised, therefore, when we find that the pepper of the latter is greatly dearer than that of the former.

The next important article of this branch of our subject is *Coffee*. This interesting plant was introduced into Java from Arabia, in the year 1723, by the Dutch governor, General Zwardekroon, and is still nearly confined to that fine island. The Malays, who, from their intercourse with the Arabs, have long known the berry, call it by the Arabian name of *Kawah*, but the Javanese understand no other than the European one, *Coffee*.

Of coffee I believe there is but one species, and no other varieties than such as are superinduced by culture and climate. In its native country, Arabia, it appears to be an inhabitant of the mountains. A

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* Buchanan's Journey through Mysore, Vol. II. p. 464, 465.

hardy plant, it will thrive in the hot plains under the equator, on the level of the ocean, but the fruit degenerates, and it approximates to its native perfection, in proportion as it is cultivated in a climate resembling its parent one. In the hot plains of Java, the fruit soon comes to maturity, is yielded in great quantity, but is large, spongy, and comparatively insipid. As we ascend the hills to a very considerable elevation,—the plant progressively comes slower to maturity,—continues to bear for a longer time,—and bears a smaller quantity of berries, which are of less size, but of finer quality. I suspect the same observation now made respecting coffee might be extended to all vegetable products of delicate flavour ; thus the pepper of the Indian islands is of inferior flavour to that of the parent country Malabar,—the nutmegs of Sumatra, Penang, or the West Indies, inferior to those of Banda,—the cloves of Bourbon to those of Amboyna. The probability is, that no skill in culture will ever enable the exotic product to equal the indigenous one in any of these cases.

The culture of the coffee plant in Java is somewhat peculiar, and, therefore, a short sketch of it will be necessary. The best situation for coffee gardens are the vallies in the neighbourhood of the higher mountains, at an elevation of three and four thousand feet above the level of the sea. *A* rich dark loam, with an admixture of sand, is the fittest

soil. In some thin clayey soils the plant pines,—the leaf, instead of a dark green, is of a sickly yellow, and little or no fruit is produced. The lands fitted for the growth of coffee in Java are such as, in the present ratio of land to population, are applied to no other use, and are, of course, very abundant. The seedlings are raised in beds or nurseries, and transplanted, almost as soon as they appear above ground, into new beds about a foot asunder, and under the protection of sheds constructed for the purpose. When eighteen months old they are removed into the gardens, where they are planted at regular distances, from six to eight feet, as the soil happens to be less or more fertile. In a fertile soil, the plants growing luxuriantly demand most room. The most striking peculiarity in the culture of coffee in Java is the planting of trees with the coffee plants, with the view of affording them shade and protection from the direct rays of the sun. The tree used for this purpose is the same as that so frequently used as a vegetating prop for pepper, the *Dădap*, (*Erythrina.*) They are planted by cuttings at the same time with the young coffee plants. How this practice, which is unknown in the parallel climate of the West Indian islands, was introduced, or why it is persevered in, I am at a loss to understand. In the hot plains, where, indeed, it is the practice to plant them thickest, it is reasonable to believe

that their shade improves the flavour of the berry, but in the colder regions, there is good ground to think that they are altogether superfluous, and that they needlessly augment the charge of production. Of late years, since the monopoly has been less rigidly enforced, the natives have been in the practice of planting coffee in their hedges, where it is found to produce large crops of berries in no measure inferior to the more elaborate produce of the regular gardens. Weeding and hoeing are the principal cares of the cultivator. When the plants have attained their full size, not much attention to the former is requisite, as the thick shade of the plants, excluding the sun, suppresses the growth of weeds. Three hoeings, annually, are the utmost that the plants receive. No pruning is practised, as in the West Indies, but the plants permitted to shoot in wild luxuriance. The plant is liable to few, hardly, indeed, to any accidents or diseases, when a judicious selection of land is made.*

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* In the West Indies, coffee walks, as they are there called, are very apt to suffer from northerly winds: "They, the coffee plants," says Edwards, "will thrive in any situation, provided it be screened from the north winds, which often destroy the blossom, and sometimes in the after part of the year, when these winds prevail most, entirely strip the tree of both fruit and leaves; blasting in a moment all the hopes of the planter."—*History of the West Indies*, Vol. II. p. 288.

Coffee plants afford a small crop in the third year, and a full one in the fourth. If in elevated situations, they will continue to bear for twenty years, but, in the plain, not above half that time. The season of bearing is very variable from year to year, even in the same situation, and difference of climate induces still greater variations in this respect. The crop is, however, generally reaped in the course of the dry half of the year. * This is done by plucking the ripe berries one by one with the hand, an operation usually left to the women and children. There are two modes of drying the coffee, the most approved of which consists in placing the coffee on hurdles, under which a slow wood fire is kept up during the night, while fresh air is constantly admitted, and the berries frequently moved to prevent fermentation. By the other method the berries are dried in the sun. By the first method the colour and flavour of the beans are best preserved. The usual mode of separating the coffee from the husk, is pounding in a bag of buffalo hide and winnowing, by which the purpose is perfectly well effected.

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* The appearance of the coffee plantations in the season of flowering is extremely beautiful. The white blossoms are in such profusion, that the plants appear as if loaded with a heavy fall of snow. M. Humboldt has noticed this, and, indeed, it occurs with pleasure to every native of a northern country who sees a rich coffee garden.

The Dutch growing coffee, by the system of *compulsion*, "by means not very philanthropic," as M. Humboldt calls it, found that, on a medium of the coffee culture in all situations, and of every age, the average produce of a plant did not, from year to year, exceed a pound and a quarter. Sufficient time has not yet elapsed since more freedom has been given to the coffee culture, to enable us to determine what improvement in the fecundity of the plant might be effected by the care and economy of free culture; but, it may be remarked, that the produce of the unweeded and neglected gardens of the eastern districts of Java, when they fell to the care of private individuals, were found to average for each plant not a pound and a quarter, but two pounds. A parallel result, it has been already noticed, has been the consequence of a free culture of pepper. Some plants in their maturity, and in favourable situations, are found to yield crops of thirty and forty pounds. * An acre

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* Edwards observes of the elaborate culture of the West Indies: "In rich and spongy soils, a single tree has been known to yield from six to eight pounds of coffee. I mean when pulped and dried. In a different situation, a pound and a quarter from each tree, on an average, is great yielding; but then the coffee is infinitely better in point of flavour."—*Hist. of the West Indies,* Vol. II. p. 289. The produce of lands on the continent of America more nearly resem-

of ground planted with coffee, the plants at the distance of six feet, (a greater distance being supposed to be compensated by superior fecundity,) and each plant being supposed to yield two pounds, the annual produce will then be 2420 lbs., which exceeds that of Jamaica as 100 is to 62½. The price to the grower in Jamaica, under the most favourable circumstances, was L.4 per cwt., according to Edwards. In Java, under a system of unrestricted culture, and security, by which the natives would be reconciled to this branch of husbandry, it might be raised for one *fourth* of this cost.

The *Cacoa* has of late years been introduced into Java and the Philippines, but in the former at least has only been hitherto cultivated in small quantity for the domestic consumption of the European colonists. That island, from its rich soil and the humidity of its climate, appears to be peculiarly well suited for the culture. As, however, from the nature of the plant, the culture is precarious and tedious, we may pronounce, that it is fit-

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bles those of Java. "In plantations well weeded and *watered*, and recently cultivated," says Humboldt, "we find trees bearing sixteen, eighteen, and even twenty pounds of coffee. In general, however, a produce of more than a pound and a half, or two pounds, cannot be expected from each plant, and even this is superior to the mean produce of the West India islands."—*Humboldt's Personal Narrative*, Vol. IV.

ter for the care of the enlightened and intelligent European colonist, than for the indolent and short-sighted labour of the native inhabitants.

I come now to offer some account of the more peculiar and almost exclusive products of the Indian islands, and shall begin with the finer spiceries, and first with the *Clove*, (*Caryophulus aromaticus.*) "The clove tree," says Rumphius "appears to me the most beautiful, the most elegant, and the most precious of all known trees." * In form it commonly resembles the laurel, and sometimes the beech. Its height is about that of an ordinary cherry tree. The trunk is straight, and rises to the height of four or five feet before it throws out branches. The bark is smooth, thin, and adheres closely to the wood, which is hard and strong, but of an ugly grey colour, and, therefore, not suited for cabinet work. In the commencement of the wet season, which is the month of May in the native country of the clove, the tree throws out a profusion of new leaves. Soon after this the germs of the fruit are discovered at the extremities of the young shoots, and in the four following months the cloves are completely formed. The fruit, at first of a green colour, assumes in time a pale yellow, and then becomes of a blood

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* Herbarium Amboinese, Tom. II. p. 1.

red colour, if of the most ordinary variety. This is the period when the clove is fit to be used as a spice, and, of course, the period of the clove harvest. It is not, however, the period of the full maturity of the fruit, which requires three weeks longer to perfect itself, and serve for the purposes of propagation. In this short period the fruit swells to an extraordinary size, loses much of its spicy quality, and contains a hard nucleus like the seed of the bay. This state of the fruit is what Europeans call the *Mother* clove, and the natives *Poleng*.—There appear to be five varieties of the clove, viz. the ordinary cultivated clove, —the clove called the female clove by the natives, —which has a pale stem,—the *Kiri*, or *loory* clove,—the royal clove, which is very scarce,—and the wild clove. The three first are equally valuable as spices, the female being considered fittest for the distillation of essential oil. The wild clove has hardly any aromatic flavour, and is, of course, of no value. *

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* The following curious, but somewhat fanciful, description of the clove-tree, is given by Sir Thomas Herbert: "The clove tree differs in proportion, according to the place where it receives its vigour; some are comparable to the Bay, which it resembles, the leaves only somewhat narrower, others to the Box, or such like trees of humble stature; 'tis most part of the year green, having leaves long and small, distending into many branches. It blossoms early, but becomes exceeding in-

Of all useful plants the clove has perhaps the most limited geographical distribution. It was originally confined to the five Molucca islands, and chiefly to *Machian*. From these it was conveyed to Amboyna a very short time only before the arrival of the Portuguese. The portion of Amboyna called Leytimur, and the Uliasser islands, produced no cloves until the arrival of the Dutch. By these the cultivation is now restricted to Amboyna, every effort being made to extirpate the plant elsewhere. To what distance from the parent country the culture might be successfully extended, there has been no opportunity of ascertaining. Rumphius informs us, that the plant is not partial to large islands, and does not answer well in Gelolo, Ceram, Beuroe, or Celebes. It is probable, that Beuroe and the Xula isles are the utmost western limit of the successful culture of the clove. The writer just quoted informs us, that the Javanese and Macassars, when they were the carriers in the spice trade to the western emporia of the Archipelago, conveyed to their own country,

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constant in complexion, from a virgin white varying into other colours, for in the morn it shews a pale green, in the meridian a distempered red, and sets in blackness. The cloves manifest themselves at the utmost end of the branches, and in their growing evaporate such sense-ravishing odours as if a compendium of nature's sweetest gums were there extracted and united." P. 370.

with great care, young clove plants, and *mother cloves*, from which trees were reared that produced *no fruit.** Through the speculative enterprise of Europeans, the clove has in later times been cultivated so as to bear fruit in some of the western parts of the Archipelago, in the Mauritius, and in the West Indies. They have been cultivated for near fifty years in the Mauritius, where they bear fruit, of inferior quality and high price, of which the unimpaired existence of the Dutch monopoly affords an unanswerable argument. The fact seems to be, that, like the grape, but in a much higher degree, the clove *may* be raised at a heavy expence, and of inferior quality, in soils and climates little suited to it. How wonderfully restricted the soil and climate of the clove is, may be gathered from this well-known fact, that, in the parent islands, the tree yields fruit in the seventh and eighth year of its growth, and grows almost spontaneously without care or culture; whereas, at Amboyna, where it is an exotic, it does not bear until the tenth and twelfth, and demands very considerable attention.

In almost all the languages of the Archipelago,

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* "Unde apparet," says Rumphius, "quod summus verum arbiter sapienta singulæ regioni suas collocaverit divitias, caryophyllosque in Molluccensium regno constituerit, extra quod nulla humana industria propagari, vel perfecti coli possunt." *Herb. Amb.*, Tom. II. p. 4.

the clove is known by one of these two names, *Chăngkeh*, and *Bungah*—or *Buah-Lawang*. It is a remarkable fact, but one which admits of some explanation, that these are foreign terms, and do not belong to the languages of the inhabitants of the parent country of the clove. It turns out, on examination, that the natives of the Moluccas neither at present use, nor, in any period of their history, appear to have used, this elegant aromatic, though so much sought after by distant nations, both of warm and temperate regions, and even by the greater tribes of the Archipelago itself. * We cannot then be surprised that a *foreign* name should generally have superseded the *native* ones, for a commodity chiefly interesting to foreigners, who taught the value of it. The name of the clove in several of the languages is naturally derived from the striking resemblance of the fruit to a nail. This appears also to be the origin of the Chinese name *Thenghio*, which means *odoriferous nails*. The Chinese traded to the Archipelago very early for this commodity, and it is highly probable, that the word *Chăngkeh*, used by the people of Java and Celebes, is a corruption of the Chinese name. †

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* The natives, Rumphius says, rarely if ever use the clove as food, but now and then mix it in small quantities in the formation of an unguent used as a cosmetic, and occasionally with their tobacco.

† Herb. Amb. Tom. II. p. 3.

With regard to the second name, which is by some tribes called *Buah*, and by others *Bungah*, words which mean, the one fruit, and the other flower, we may observe, that the term *flower* is, by a natural mistake, applied to it by the more distant races, but *fruit* more correctly by the natives of the country. Valentyn tells us, that *Lawang* is an abbreviation of *Hălawang*, "gold," the compound, meaning "the gold-fruit or flower," because it brought wealth to the natives. Notwithstanding this explanation, it must, however, be remarked, that the word *Lawang*, or at least *Lawanga*, is the name of the clove in the language of the Telingas, the conductors of the early trade in spices from the west, from whom it might have passed into the languages of the western tribes, as the Chinese name did into those of the east. The only genuine *native* name I can discover, is that of the people of Tidor, who call it *Gomode*.

The clove neither thrives well near the sea, where it suffers from the spray, nor in the higher mountains, where it suffers from the cold. The soil which suits it is a dark loam, having underneath a layer of a dusky yellow earth, intermixed with gravel. A sandy soil, a hard clay, and the wet ground in which sedges grow, are to be avoided.—The tree may be propagated either directly from the mother cloves, or by transplanting the young plants found in the clove gardens from the

natural propagation of the seed. * Those raised by the first method grow luxuriantly, but are alleged to yield more leaves than fruit, and growing remarkably straight, to be difficult to climb for the purpose of reaping the harvest. The trees propagated by the latter method are preferred, but the culture is laborious, and the success of the operation uncertain, until the plants have attained the height of five or six feet. The young plants at first require the shade of other trees, and must, therefore, be planted among them. As they grow up these other plants must be removed, leaving here and there a few fruit trees, such as the *kănari*, the coconut, &c. the neighbourhood of which, it has been discovered, is favourable to the clove. The clove trees must themselves be kept pruned, and care be taken that they are not choaked with weeds, or by too many of the fruit trees just mentioned, in failure of which attention the plants will languish, or degenerate into wild cloves.

Such is the culture requisite in Amboyna, a soil and climate foreign to the plant, where comparatively much care and attention are required. In its native country, on the contrary, the clove grows luxu-

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* Besides those plants propagated by the falling of the ripe seed from the trees, others are propagated by birds which use the clove as food, such as a white and a green species of pigeon, and the cassawary.

riantly and almost spontaneously, being propagated and coming to perfection with hardly *any* culture. In its native country the clove tree, as already mentioned, begins to yield fruit in the seventh or eighth year, but at Amboyna not until the tenth or twelfth. Examples are given of clove trees living to the age of 100 and 130 years, but the ordinary life of one in Amboyna does not average above 75. Much depends upon the nature of the soil and ground in which the tree has taken root. The clove, though generally a hardy plant, suffers from excessive drought, and is apt to be destroyed by the depredations of a worm which insinuates itself into the wood and kills the tree. In particular seasons thousands perish from this cause.

The reaping of the clove harvest is perfectly simple. When the fruit begins to grow red, the reaping is begun. The ground underneath the tree is clean swept. The nearest clusters are taken off with the hand, and the more distant with the assistance of crooked sticks. Great care is necessary that the trees, in this operation, should not be rudely handled, as any injury offered to them in this way, it is ascertained, would prevent them from bearing for years.—The curing of the cloves consists in placing them for some days on hurdles, where they are smoked by a slow wood fire, whicl

gives them a brown colour, and afterwards drying them in the sun, when they turn black, as we see them, as an article of commerce. In some places they are scalded in hot water before being smoked, but this practice is not common. Such cloves as casually fall on the ground, and are picked up in small quantities, the cultivators do not think it worth while to subject to the process of smoking, and they are merely dried in the sun. They are discoverable by their shrivelled appearance, and are of inferior value. The period of harvest is from October to December.

Of the fecundity of the clove it is not very easy to speak distinctly. The produce from one year to another is very unequal. At intervals of from three to six years they usually yield one extraordinary crop, but then a year now and then intervenes when they yield none at all; in others they will give a double harvest. Some extraordinary instances of fecundity in particular trees are quoted. Rumphius and Valentyn tell us of a remarkable tree, a hundred and thirty years old, which one year gave the enormous crop of eleven hundred pounds, and another year half this quantity.* About the proportion of two-thirds of a

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* A correspondent, who resided twenty-four years in Amboyna, and was intimately acquainted with the nature of the clove culture, has the following passage in a letter to me on

clove park are considered to be bearing trees, the remaining third being allowed for barren and young trees. According to the present mode of culture, perhaps, it will not be safe to average the production of all trees at above five pounds. From the inequalities of the ground in which the cloves are usually cultivated, the trees are not planted at regular distances, and the distances, from the practice of interspersing common *fruit* trees with the cloves, and the inattention to economy in the appropriation of the land, which is the consequence of a superabundance of it, is very considerable. Twenty-four feet may be considered as an average. According to these data, the produce of an acre will be 375 lbs. avoirdupois, and deducting one-eighth for young trees under ten years, 328 lbs. By a free culture, as in the case of pepper, a much

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the subject: "A clove tree, well weeded and taken care of, will produce from five to twenty pounds, and a produce of about seven pounds may be reckoned upon for certain. On the other hand, a tree that is neglected will not give above two or three pounds. As an example of extraordinary productiveness, I remember, many years ago, a clove tree in Larique, on the west side of Amboyna, which regularly gave a crop of from forty to sixty pounds a year, but much more in particular seasons, as the year 1788, when it gave 140 pounds. This tree, the trunk of which was eight feet in diameter, was held sacred by the natives, and by them alleged to be 150 years old. It gradually decayed and withered, and in the year 1793 finally died."

larger produce than here stated would, no doubt, be obtained, and this would be enhanced by tolerating the growth of the tree in its native and congenial clime, the proper Moluccas, instead of absurdly, not to say iniquitously, forcing it in a soil where it requires more care, labour, and expence to raise it.

The *Nutmeg tree* (*Nux myristicæ*) is now to be described. It grows to the height of forty and fifty feet, with a well branched stem, and in appearance much resembles the clove, though less acuminated at top, and that the branches extend more in a lateral direction. The bark is smooth, and externally of a dull ash-colour, intermixed with green. Within it is red and succulent. The leaves resemble those of the pear, but are sharper and larger, having their upper surface of a dark green, and their under of a grey colour, the common character of the leaves of all the nut tribe. When rubbed or chewed they emit a fine aromatic odour. If the tree be wounded or a branch lopped off, a liquor of a blood-red colour issues, which gives an indelible stain to cloth. From such an accident the tree pines, sickens, and bears no more fruit. The first appearances of the fruit are little white or yellow heads, which expand into small flowers resembling those of the lily of the valley. In the midst of this flower appears a small red pistil, which in time expands in-

to the fruit, which, in all, takes nine months to come to maturity. The tree bears throughout the year, the same plant having flowers and fruit in every stage. The fruit is about the size, and has much the appearance, of a nectarine. It is marked all round by a furrow, such as the peach has on one side only. The outer coat of this fruit is smooth, and when young of a lively green. As it ripens it acquires a red blush like a ripe peach, and bursting at the furrow, exhibits the nutmeg with its reticulated coat the mace of a fine crimson colour. The external pulpy covering is about half an inch thick, of a firm consistence, succulent, and to the taste austere and astringent. Appearing through the interstices of the mace is the nutmeg, which is loosely inclosed in a thin shell of black glossy appearance, not difficultly broken. * Of the nutmeg

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* "The nutmeg, like trees most excellent, is not very *lofty* in height, scarce rising so high as the cherry, by some it is resembled to the peach, but varies in form of leaf and grain, and affects more compass. The nut is clothed with a defensive husk like those of a baser quality, and resembles the thick rind of a walnut, but at full ripeness discovers her naked purity, and the mace chastely entwines (with a vermillion blush) her endeared fruit and sister, which hath a third coat, and both of them breathe out most pleasing smells. The mace in few days, (like choice beauties,) by the sun's flames, becomes tawny; yet, in that complexion, best pleases the rustic gatherer."—*Sir Thomas Herbert's Travels*, p. 370.

there are in the Indian islands at least eight kinds, which appear only to be varieties, though generally permanent ones. The only important distinction is effected by culture. All the cultivated kinds are high-flavoured; the wild ones much less so. The shape is of little consequence, as *long* and *short* ones of the domestic varieties are found, though the wild be usually the former. The same tree seldom bears flowers with a pistil and stamen, which grow usually on distinct trees. The trees bearing the male flowers yielding no fruit, the ignorant planters are often in the habit of cutting them down, but fortunately they are too numerous for their efforts.

The limits of the geographical distribution of the nutmeg are much wider than those of the clove. This tree is found even beyond the limits of the Archipelago, having been discovered in New Holland, in the southern peninsula of India, and in Cochinchina. The produce of all these countries is, however, utterly tasteless and without flavour, and for all useful purposes, the geographical limits of the country of the nutmeg are nearly as limited as that of the clove, and, in fact, they are almost the same. Well flavoured nutmegs are found in New Guinea, in Ceram, Gilolo, Ternati, and all the circumjacent islands, as well as in Amboyna, Bouroe, &c. The Dutch have endeavoured, pretty successfully, to extirpate them in these

their native country, and to confine them to three of the little cluster of the Banda isles, viz. Pulo Ay, Banda, and Nera.

The same singular fact noticed regarding the clove, that is not an object of consumption in the countries where it grows, is equally to be observed of the nutmeg. While these two plants excited the curiosity of the most distant nations of the earth, and stimulated them to enterprises the most momentous, they were utterly neglected by the natives of the countries which produced them almost spontaneously. From this cause it is, that the *name* by which they are generally known, as in the case of the clove, is not a native but a foreign one,—a name borrowed from the language of those who traded in it,—of those who taught the natives that it was of any utility. This name *Pala*, or "the fruit," is Sanskrit, according to the corruption which it *must* undergo in the pronunciation of the Polynesian languages, but whether directly imposed by the Hindus, or intermediately by the Javanese, who are known to have supplied the demands of the Hindus at the western emporia with it, it is not easy to determine. This general term appears, however, only to have superseded the native ones, if we may judge from the example of the language of Ternati, in which the indigenous name *Gasori* is still preserved. In all the languages of the Archipelago, the mace is called "flower of the nutmeg," an

error which could not have originated with the people in whose country the nutmeg grew, and who must have been familiar with its appearances. Rumphius informs us, that, in the languages of the Decan, the name for the nutmeg, *Jaifol*, means "Javanese flowers," the Javanese having, according to him, persuaded the inhabitants of Western India that the nutmeg was the produce of their own country.* The word abbreviated *Jaiful*, common to most of the vernacular languages of India, is, however, I believe, correctly written in Sanskrit *Jatiphul*, which means the flower of the *Jati*. If *Jati* here means the teak tree of Java, the mistake may still have had the origin ascribed to it by Rumphius.

The nutmeg tree comes to maturity in nearly the same time as the clove, or in its ninth year, and its life is nearly of the same duration, averaging about seventy-five. It is propagated with somewhat more difficulty, at least by artificial means, and is alleged to be in all respects, in the proportion of one-third, more expensive to rear. The trees, which are transplanted into the nutmeg parks, are generally such as have been propagated from the fruit by a certain blue pigeon, called by the natives of Banda *Falor*, by the Malays the

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* "In Decana *Jaifol* quod denotat flores Javanenses, quum fallaces Javani hominibus persuaderent fructus esse in sua patria crescentes."—*Herb. Amb.* Tom. II. p. 16.

Nutmeg-bird, and by the Dutch the *Nut-eater*. This bird, extracting the nutmeg from its pulpy covering, devours the whole entire. The mace only is digested, and the nutmeg, in its shell, being voided, is readily propagated by the assistance of the bird's dung, when it falls in a shady place. The practice of transplanting is usually followed and performed commonly in the third year, but may be done later, and such is the hardihood of the plant, that if the earth be carefully lifted with the tree, and the tap-root not injured, it may safely be removed, indeed, at any age. The nutmeg-tree, in every period of its growth, requires the shade and protection of other trees, and in the parks is consequently always interspersed with the common forest trees, against cutting which down, in the Banda isles, there is an express law.

Although the nutmeg bears throughout the year, there are still three distinct periods for reaping the crop, or three harvests;—one in April,—one in July, and August, in the midst of the periodical rains,—and one in November. The first affords the best fruit, the second the largest quantity; the third is a sort of supplemental harvest to the second.

The fruit is discovered to be ripe by the blush on the pulpy covering, and by its bursting. The outer covering being thrown away, the nuts are carried home, and the first part of the process of

curing them consists in separating the mace from the nutmeg. The only preparation which the former undergoes is some days drying in the sun, when the rich crimson changes into a dull red, and ultimately into the dusky yellow, which we see mace have as an article of commerce. The curing of the nutmegs is a process of some delicacy, for they are much more liable to injury than the cloves, a peculiar insect, called the nutmeg-insect, never failing to form within them, if they be not well cured, and often forming, indeed, in spite of every attention. They are first dried for three days in the sun, taking care to remove them in the evening from the dews of the night. After this, laid upon hurdles, they are daily smoked by a slow wood fire for three months, at the end of which time they are freed from the shells, * and dipped twice or thrice in lime-water, or rather a thick mixture of lime and water, made of fine shells, which is supposed to secure them from the depredations of insects and worms. After this last process, they are fit for the market.

Nutmegs in commerce are divided into two sorts. The first and most valuable are those which are regularly plucked from the trees as they ripen, and the second, or inferior, consist of such

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* The wild nutmegs, of which considerable quantities are sold, in despite of the monopoly, are always brought to market in the shell.

as fall from the tree, and, from the delicacy of the fruit, sustain injury by lying for any time on the moist earth. The first are always sent to the superior market of Europe, the last reserved for the India market.

Good nutmeg trees, well taken care of, will give annually a produce of from ten to fourteen pounds of mace and nutmegs together. The average produce of nutmeg plantations of every sort, making allowance for unproductive trees, is ascertained to be 65 ounces avoirdupois a tree, including mace and nutmeg.* The trees are planted at the distance of twenty-four feet, and, therefore, the produce of an English acre is 304$\frac{2}{3}$ lbs. But, from this, an eighth is to be deducted for young trees under ten years old, which gives the real product of the acre at 266$\frac{2}{3}$ lbs. avoirdupois, or two *piculs* exactly.

In the eastern part of the Indian Archipelago are to be found several minor spicy products, found in no other part of the world, of which a brief account is now to be given. The first of these, which I shall describe, is the *Massoy* bark-tree, more correctly *misoi*, the *Cortex oninus* of Rumphius. The tree is tall, straight, and thick, having a smooth bark of a pale grey colour, which

* Manuscript of Mr Hopkins, in the collection of the Earl of Minto.

is the only useful part of the plant. The leaves are six or seven inches long, two or three broad, and sharp-pointed. The fruit is in clusters of the size of grapes, but more resembling the *Langseh*. They have an aromatic odour like the bark, but fainter. The bark of commerce is of two kinds, the produce of one tree. The best is the thickest, and is obtained from the lower part of the trunk; the inferior from the upper part, and the larger branches.

The Massoy bark-tree is a native of the western coast of New Guinea, in the country of Woni, corruptly termed Onin, and has been found no where else. In the language of the country, it is called *Aycora; Misoi* is its commercial appellation among the traders from the west.

This aromatic is rarely used for culinary purposes, but chiefly as an ingredient in the cosmetics used by the natives of the western part of the Archipelago, particularly the Javanese and Malays. To these people its consumption was at one time confined, but in more recent times it has been in request by the Chinese and Japanese. For commercial purposes, the bark is usually cut into pieces of two feet and a half long, and tied into bundles or faggots of five-and-twenty or thirty such pieces.

The *Culitlawan*, properly *Kulit-lawang*, (*Laurus culitlawan*, L.) is a species of laurel much resembling the *Cassia lignea*. The tree is tall,

straight, and thick. The fruit is not often seen. It appears without any distinct flower, and resembles a small acorn,—is of a grey colour, and smooth. The bark, the only useful part, is smooth, and of an ash-colour. Internally this is paler than the *misoi* bark, that of the trunk being in thickness about an inch, and that of the larger branches, which is the best, one half of this.

The geographical distribution of this tree is much wider than that of the last, or of the clove or nutmeg. It is found through every part of the Indian Archipelago, from Sumatra to New Guinea, and Mindanao, but is most abundant, and of the best quality, in the native country of the clove and nutmeg. Besides its more common and commercial appellation of *Kulit-lawang*, or *Clove-bark*, which it receives from the resemblance of its taste and fragrance to that of the clove, it is, as with other plants, known by names commensurate with its diffusion. Thus in Javanese it is called *Sendok*, in Amboynese *Salakar*, in the Ceramose *Tejo*, and in the language of Aru *Eyk*.

More abundant than the Misoi bark, the clove bark is less valuable, bearing only half the price of the former. Its principal use is as a cosmetic, though the Javanese and Balinese occasionally use it for culinary purposes. By distillation, it yields a fragrant essential oil, and a strong distilled water.

Plants which are mere shrubs in northern cli-

mates, assume, as is well known, the appearance of trees in the warm climates of the equator. A remarkable example of this is afforded in the *Cayuputi* trees (*Melaleuca leucadendron*) of the Indian islands, which are gigantic myrtles. There are *three* of these, the two largest of which only afford subjects for economical uses. The bark of the largest of these affords the material with which the native shipping of the Moluccas are caulked, and the leaf of the smaller, by distillation, the fragrant essential oil which has been used for medical purposes, sometimes internally as a powerful sudorific, but more frequently externally as an useful embrocation, under the ignorant and corrupt denomination of *Cajeput*. The larger sort is a mountain tree, and grows in extensive continuous forests, excluding most of other plants; the smaller thrives near the sea-coast. They are all found as far west and north as the south-eastern coast of Borneo, but abound chiefly in the country of the clove and nutmeg, and especially the islands of Bouroe and Ceram.

These trees are easily distinguished in the forest by the whiteness of their bark, which has some resemblance in structure and appearance to that of the birch. This white colour gives to the tree its commercial and vulgar name of *Kayu-puti*, which means literally "*white wood*." Besides this more current name, it is known in Malay under that of

Gălam, in Ternati by that of *Bajule*, in Amboyna by the various appellations of *Kilam*, *Ilan*, and *Elan*, and in Ceram by that of *Sakelan*.

The Cinnamon tree is not a native of the Indian islands, but the *Cassia tree* is found in the more northern parts, as in the Philippines, Majindanao, Sumatra, Borneo, and parts of Celebes. Rumphius has remarked, that the trees which yield cinnamon, cassia, and clove bark, though so much alike, are hardly ever found in the same countries. * The cinnamon tree has, in recent times, been introduced into the Indian islands, and grows luxuriantly, but this is not enough,—it must grow as cheaply, and of equal quality, with that of the country which produces it in the highest perfection, to be useful as an article of agricultural industry.

Of aromatics more generally diffused, several are common to the Indian islands with other countries. The *Cardamom* (*Amomum cardamomum*) is a native of Java, where it is both cultivated and found wild in the woods. The Javanese name *Kapulaga* is the only one I can discover for it, from which circumstance it is probable that it was originally confined to that island. In the year 1670, it was propagated in the Moluccas, where it thrives sufficiently well. The Carda-

* Herb. Amb. Tom. II. p. 66.

moms of the Indian islands, whether from carelessness in the culture, or otherwise, are much inferior to those of Malabar.

Ginger (Amomum zinziber) is extensively diffused through the Indian isles, and of pretty general use among the natives, who neglect the finer spices. The great and smaller varieties are cultivated, and the sub-varieties distinguished by their brown or white colours. There is no production which has a greater diversity of names. Beginning from the west, the Malays call it *Alia*, the Javanese and Balinese *Jahi*, the Macassars *Leya*, the people of Ternati *Woraka*, those of Tidor *Gora*, those of Amboyna *Siwe*, and those of Banda *Sohi*. This diversity proves, as usual, the wide diffusion of the plant in its wild state. The Ginger of the Indian Archipelago is inferior in quality to that of Malabar or Bengal.

Several very singular products are next to be described, most of which are peculiar to the Indian islands, and which either as perfumes, or for imagined medical virtues, are in some repute among the natives themselves, but in much higher among foreigners, particularly the greater nations of the East. These are Malayan camphor, benzoin, lignum aloes, and sandal-wood.

The tree which yields the Malayan camphor, the *Dryobalanops camphora* of Colebroke,* is known

* Asiatic Researches, Vol. XII.

to be a large tree, equal to any of the huge forest trees of the countries in which it grows. It is not a laurel like the camphor tree of Japan, as was once supposed, but of a class remarkable for resinous and aromatic productions, the same which yields *damar* and similar substances. It appears to be an inhabitant of the plain, growing near the sea-coast. Its geographical boundaries are extremely limited. It is found no where in the world but in the two great islands of Sumatra and Borneo. Even in these it is not found to the south of the line, and to the north not beyond the third degree of latitude. The useful portion of the tree is an essential oil found in some individual plants in a concrete, in others in a fluid form, in fissures of the wood. The first is chiefly of value as an article of commerce. The tree is not cultivated, and as many exist without *any* camphor, we may infer that it is abundant in the forests. The camphor is only obtained by cutting it down, and extracting the drug from the fissures. It is separated from impurities by steeping, washing, and filtration through sieves.

We are not possessed of the genuine name of the tree in any native language. The demand for the drug it yields, like that for the clove and nutmeg, is owing not to the taste of the natives, but the whim of more civilized people. It is in request among the Persians, the Hindus, the Arabs, but, above all,

among the Chinese, whose wealth, it is, that raises the price to its present exorbitant height. The commodity is, accordingly, recognized by a foreign name. This name *Kapur* is either a corruption of the Persian *Kapur*, or of the original Sanskrit *Karpura*. The word *Barus*, derived from the name of the principal mart of the commodity in Sumatra, has been affixed by traders to discriminate between it and the parallel produce of Japan, obtained by a cheaper process from the camphor-yielding laurel. The price of Malay camphor, compared to that of Japan, is in the ratio of 20 to 1, an extravagant disproportion, which arises probably rather from the superstitious virtues ascribed to the first by the consumer, and, from a production limited in proportion to the demand, than from any intrinsic difference in their real qualities. *

The next article is the *Frankincense* of the Indian islands, or *Benzoin*, (*Styrax benzoin.*) The tree which produces this gum does not grow to any considerable size. It is an inhabitant of the hot plains, and grows in rich moist lands, such as are fit for the growth of marsh rice. It is a native of the same countries with the camphor tree, having a geographical limit a little more extended than it, as it is occasionally found to the south of the

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* Marsden's Sumatra, p. 150.

line. Borneo and Sumatra are the only countries which produce it, and the territory of Borneo proper in the one, and that of the Battas in the other, the only portions of these. The benzoin tree, unlike the camphor, is an object of cultivation. The plants are propagated from the seed, a small brown nut, and are productive in the seventh year. The gum is obtained by making incisions in the bark, when it exudes, and is scraped off, as practised with the opium poppy. During the first three years the gum is of a clear white colour; after this it becomes brown; and, finally, after bearing ten to twelve years, the tree being exhausted, it is cut down, and by scraping the wood, a very inferior production is obtained. The gums obtained in these different stages are distinguished in commerce, and are valuable in the order I have stated them. The more considerable and civilized of the tribes of the Indian islands consume benzoin in considerable quantity as an incense, but the greater quantity produced is exported to the Mahomedan and Catholic countries of the west. Chiefly an article of external commerce, and confined to such narrow limits, it has but one name, or at least only one which is current. This is a native term, and is at full length *Kăminyan*, or abbreviated *Minyan*.

Of the tree which yields the incense so much in request in the east, and which we designate by

the different names of *Agalohin*, *Agila wood*, *Eagle wood*, and *Lignum aloes*, very little is known. The lignum aloes of commerce is a kind of unctuous substance, understood to be a decayed or diseased part of the tree, which emits in burning a fine fragrance. If it be a native of the Indian islands, the countries which produce it have not yet been ascertained. To the islanders it is known by two names, *Gharu* and *Kălambak*. The first is Sanskrit, and Rumphius justly suspects the second to be derived from the Chinese name *Kilam bac*. The countries known to produce this substance are Siam, and the different states lying between it and China, particularly the little kingdom of Champa. The great consumption of it is in China and Japan.

Sandal wood (*Santalum*) is a native of the Indian islands, and is found of three varieties,—white, yellow, and red, the two first being most esteemed. The sandal wood tree is a native of the mountains. From Java and Madura eastward it is scattered in small quantities throughout the different islands, improving in quality and quantity as we move to the east, until we reach Timur, where the best and largest supply occurs. In the language of Timur, sandal-wood is called *Aikamenil*, and in that of Amboyna *Ayasru*. In the western countries, where it either does not exist at all, or exists in small quantity and of bad quality, it is universally known

by the Sanskrit name *Chandana*, from whence it may be fair to infer, that its use was taught by the Hindus, when they propagated their religion, in the ceremonies of which it is frequently employed.

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